TEXTILE WORLD

A McGraw-Hill Publication ..... OCTOBER • 1949

Textile Wastes Treated Continuously

Page 103

OUR-CYLINDER SLASHERS
Up Pepperell Production

re high-speed, four-cylinder, inclosed slashers e now doing the work of six of the older-type shers at Pepperell Mfg. Co., Opelika, Ala., ort. See page 112.

MEASURED MOTION
Times the Job Faster

You can reduce period needed for make a time-study as much as 90% by reference to stand- ard data charts, a contribution to the industry by Methods Engineering Council. Page 122.

MONOFILAMENT FABRICS
Require Special Techniques

Processing of monofilament fabrics of saran, poly- ethylene, nylon, and the coated yarns is develop- ing rapidly and becoming standardized in many cases. See details on page 108.

HIM?
HE ALWAYS CROSSES THAT WAY.
HE WAS DUNKED IN—
AHCOWET* R S
For more lasting results in fabric processing, use Ahcowet R S . . . the all-purpose synthetic surface-active compound . . . effective in a pH range of 1-11. Wets and rewets faster, penetrates deeper, saturates more evenly, softens better.
*Trade Mark Registered
ARNOLD, HOFFMAN & CO., INCORPORATED
ESTABLISHED 1815
PLANTS AT DIGHTON, MASS., CHARLOTTE, N. C. AND CINCINNATI, OHIO
PROVIDENCE, RHODE ISLAND
NEW YORK • CINCINNATI • BOSTON
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The mainspring of a clock is designed to give lifetime service under exhausting conditions. Draper engineers have incorporated this principle into a new top motion.

Extensive trials have confirmed the soundness of this design. One mill reported, after five years on heavy fabrics, that spring breakage was negligible.

Since it is enclosed, the Clock Spring Top is clean. Because of the easier action and less strain the Clock Spring Top substantially reduces wear on all top motion parts.

Available for the X-2, XD, XP, X and E with one set, or 2 sets on heavy weaves, this top has a capacity of up to six harnesses.

For the most efficient and best top motion, try the Clock Spring Top.

DRAPER CORPORATION

HOPEDALE MASSACHUSETTS U. S. A.

Texaco Stazon stays on the bearing surfaces, stays off yarn and fabric

USE *Texaco Stazon* on top rolls. It won't creep onto the cot, so cleaner sliver and yarn are assured. Use *Texaco Stazon* for loom lubrication. It won't splatter or drip onto the fabric. Inspectors everywhere know: *"Stazon stays on"*... assures greater production of stain-free goods ... reduces costs.

Texaco Stazon has other advantages. It is a highly stable lubricant ... does not form gummy deposits ... is unaffected by humidity. And fewer applications are necessary because each application lasts longer.

Let a Texaco Lubrication Engineer help you select the proper consistency to give you best assurance of cleaner yarn and fabric. Just call the nearest of the more than 2300 Texaco Wholesale Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

LONGER BEARING LIFE. Use *Texaco Regal Starfak* in grease-lubricated ball and roller bearings. These fine lubricants resist oxidation, gum formation, separation and leakage... assure longer bearing life...lower maintenance and operating costs.

TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

For more information, write direct or use Reader Service post card.

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October, 1949
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A McGraw-Hill Publication

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THE *Long-Range* VIEW

Every One Features Cost Cutting

Every issue of TEXTILE WORLD, for years and years, could be considered an issue devoted largely to suggestions for reducing textile-manufacturing costs and increasing productivity per operator. During the war years, emphasis in mills shifted somewhat from cutting costs and improving quality to an all-out effort to produce a large volume of goods of acceptable quality. Since then, as most mill men knew would be the case, the emphasis has swung sharply to cutting costs, improving quality, and getting the highest production possible for every dollar spent. Despite the recent improvement in textile activity, emphasis must still be on keeping costs down.

In this issue TEXTILE WORLD joins with all the McGraw-Hill publications in a program to dramatize the cost-cutting theme. A part of that program consists of using the symbol you see on this page on all of the articles to which it applies. You may be surprised to find how very many of the articles we publish contain cost-cutting information.

It has long been our policy to present technical information in as easily digestible a form as possible. We consciously try to get a maximum of cost-cutting ideas and other useful information across to you in a minimum of time. Yes, we believe there can be cost cutting even in your reading of your industry publication. The use of this symbol will help you to spot cost-cutting articles quickly, even if the title of the article stresses some other aspect of the content.

Of the many ways to cut costs, one that we recently pointed out as being too often neglected is the sacrificing of machine production for higher output per worker, even if doing so may mean the purchase of additional machinery or equipment. Cutting costs may be approached in a myriad of different ways. It may involve saving waste, eliminating unnecessary operations, or having one machine do the work of two. It may include mechanizing a manual operation, adding automatic controls, adopting straight-line operation, substituting one material for another. In some cases it means an improved stop motion to keep imperfections down, a quick way to analyze trouble, a device that will keep machine parts from breaking, or more efficient storage of materials or supplies. In other cases it involves minimizing the need for cleaning, maintaining proper machine settings, installing more efficient machinery. There seems to be no limit to the number of cost-cutting methods that could be mentioned here, but thousands of examples of them can be found by looking through past (and future!) issues of TEXTILE WORLD.

We hope you are impressed with the large number of items in our Textile Equipment News and Kinks departments that feature cost cutting in some form or another. You undoubtedly also have seen how often this theme is given prominence in the advertising pages. There is no question, in our mind, that it is the most important consideration before the textile mill man of today.

Although cost cutting is important in manufacturing textiles, we cannot pass on in this discussion without pointing out that there are also great opportunities for bringing down the cost of textiles in selling and financing. We feel that every time pressure is brought to bear on a mill manager to reduce manufacturing costs, he has a right to ask what is being done in the other phases of the business.

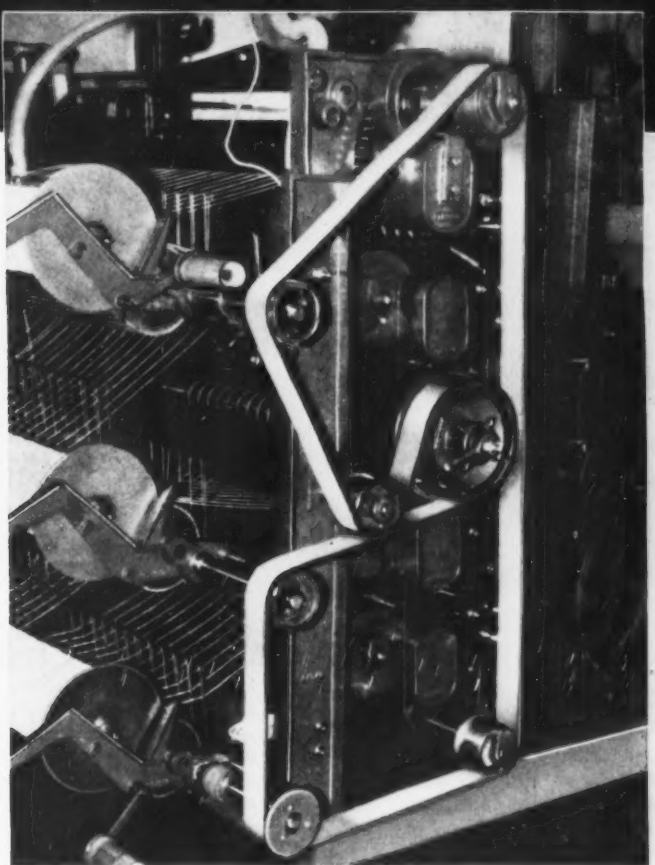
We shall not go into that aspect any further just now; we want to use the balance of the space available on this page to tell you about the special cost-cutting issue being planned for next month.

Each November we present an Annual Mill Check-Up Number. Near the end of the year is a good time to check up on what you have been doing and to make plans for the next year. For many, preparing budgets and presenting proposals for future operations are in order. Next month we will show you, with as many examples as we can cram into our special section, how textile mills have lately cut costs in one way or another. You can compare what you are doing and then, perhaps, adapt to your operation some of the new ideas presented in the section.

The November issue will be alive with the cost-cutting symbol, but we won't let it end there. You'll continue to see the symbol used in months to come to serve as a guidepost and to help emphasize an important, timely theme that will continue to be a highlight of this magazine.

C. H. Bendigo

INCREASE PRODUCTION...LOWER COST



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TANNATE Leather Belting is more reliable, gives more economical performance, assures **increased production and lowered maintenance costs** because:

- TANNATE offers maximum grip with minimum tension . . . transmits more power with less wear on bearings.
- TANNATE is resilient . . . cushions shock loads.
- TANNATE is flexible . . . operates well over small pulleys at high speeds. (Because it has low internal friction.)
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- TANNATE is stronger than most oak belts . . . lasts longer with minimum attention.

Write for detailed information and your copy of "How to Select, Install and Maintain Modern Leather Belting" . . . it's free for the asking.

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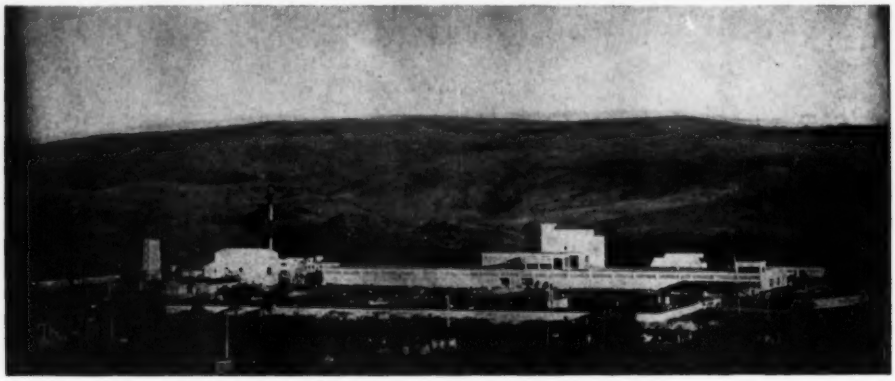

More Rayon for Chile

Rayon made by this modern new plant, the largest in Chile, costs less than imported yarn. This saving and benefit to the country's balance of trade is the result desired by Textile Manufacturers and Investors who promoted and supported construction of the plant.

It was built in seventeen months by Oscar Kohorn & Co., Ltd.—the world's leading builders of rayon plants and rayon machinery. Kohorn experts are technical managers of the plant, until the local staff gains sufficient experience to take over. Since 1948, the plant's output has aided the Chilean textile industry and the national economy.

Domestic markets of other countries can profitably be supplied by local rayon plants. With Kohorn engineering, rayon machinery and technical management a new rayon plant is certain to be built quickly and to produce efficiently, employing local labor and engineers.

Kohorn brings to your project over thirty-five years' skill and experience in Designing, Equipping and Operating complete rayon plants. Write for further information without obligation.

Complete Plants for the manufacture of Filament Rayon, Rayon Staple Fiber and Cellophane equipped in 12 months

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That's Shockless—Trouble-Free!

LINK-BELT *Electrofluid* GEAR DRIVES WITH PRECISION STEEL ROLLER CHAIN

The Ideal Slow Speed Drive

The advantages of the Electrofluid Drive are available on virtually any power application through combination with other Link-Belt enclosed gear and chain drives. Above is shown one such combination which will afford shock-proof, economical power transmission at low speed.

Three principal advantages of this drive are:

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(c) It permits the use of a smaller motor than ordinarily required to handle starting loads—improves power factor and overall efficiency.

Ask for Book No. 2085-B giving full details and application suggestions.

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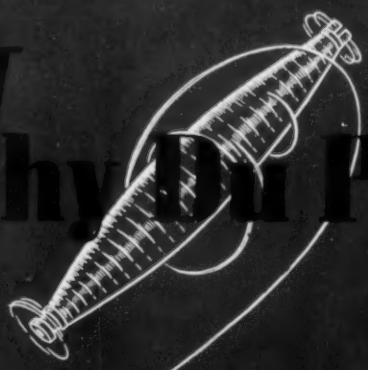
Power Transmission Machinery

"THE COMPLETE LINE"

Why Du Pont for



FOR NYLON...FOR RAYON...FOR FIBERS TO COME

Textile Fibers?

STOCKINGS TO TIRES TO—?

Du Pont technicians never think they know all about any fiber. The proved properties and the possible properties of all Du Pont fibers are continually tested and retested in Du Pont laboratories and under mill conditions.

Ten years ago Du Pont presented America with a new man-made fiber. Through close cooperation between Du Pont technicians and textile mill specialists, nylon proved the right fiber for a thousand and one textile needs from stockings to tires.

And the surface has only been scratched. Almost every day brings new uses for nylon, new fabric constructions, more efficient techniques for handling nylon in the mill, on the cutting table. Nylon is still a fiber with a future. It is still a new frontier for the textile industry; still a challenge for mills that are looking toward tomorrow.

ACETATE DIVISION • NYLON DIVISION • RAYON DIVISION
Rayon Department
E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware

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. . . LOOK TO DU PONT

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You push your knitting costs **down** *and your sales* **up** *when you run*

STANDARD *Durene**

As many new Durene licensees are finding out, Standard Durene, superior mercerized combed cotton yarn, bears down on production costs and assures greater sales.

Made from *selected raw cotton under our complete control in our own plants,* Standard Durene is kept at top quality. Its free-running smoothness, greater uniformity, and lovely luster give you more garments per hour, win more sales faster.

Get the most of the big national Durene advertising campaign by knitting with Standard Durene—10's to 120's ply, natural, bleached and dyed. Specify it today.

*Reg. U.S. Pat. Off.

Made of *Durene** multi-ply mercerized combed cotton yarn
4 WAYS BETTER than ordinary cotton yarns
EXTRA COMFORT ---more absorbent
EXTRA STRENGTH ---longer wear
EXTRA QUALITY ---lasting lustre
EXTRA SERVICE ---easy to wash

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AND

TORRINGTON *NEEDLE* BEARINGS

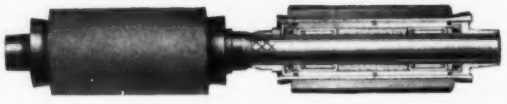
TWO RESEARCH GROUPS...

and engineering staffs of these world-known companies pooled their talents to produce an anti-friction top roll which would be universally adaptable to all drafting systems, free from operating troubles, adaptable to all types of roll covering, and requiring no complicated or delicate adjustments.

we went to work— Designing, development work, testing, re-designing . . for more than ten years the work has proceeded . . . and now we are pleased to offer the textile industry our

SACO-LOWELL-TORRINGTON

S-L-T NEEDLE BEARING TOP ROLL



FOR ROVING AND SPINNING

The S-L-T Needle Bearing Top Roll possesses many desirable features:

1. Due to the inherent cleanliness, roll picking is practically eliminated.
2. There is no wear whatever on saddle, cap bars and roll necks.
3. Shells are adaptable to any type of roll covering, either leather or synthetic.
4. Sealed-in lubricant saves lost time and lost production; lubrication required only when down for scouring and cleaning.
5. Measurable saving in overall power consumption.
6. No yarn spoilage from black oil, which generally follows routine roll picking.
7. Dual needle bearing preserves proper alignment of the shells and eliminates "rock."
8. Rolls require no adjustment by mill personnel.
9. High capacity needle bearings assure long life and low maintenance cost.
10. Shells are readily detachable and rolls can be recovered at the mill.

The S-L-T NEEDLE BEARING TOP ROLL is manufactured by THE TORRINGTON COMPANY, Torrington, Conn., and is available exclusively through SACO-LOWELL. You are invited to consult with our engineers on your top roll problems; or, write our nearest Sales Office for literature.

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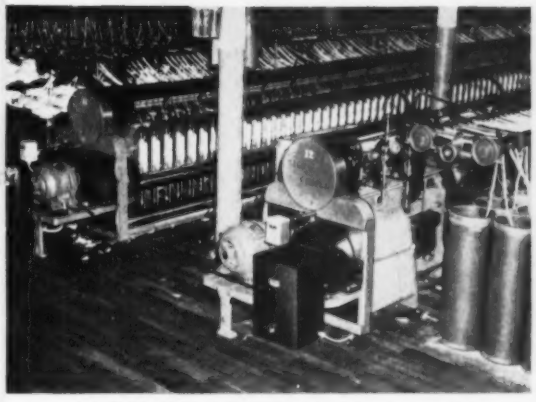
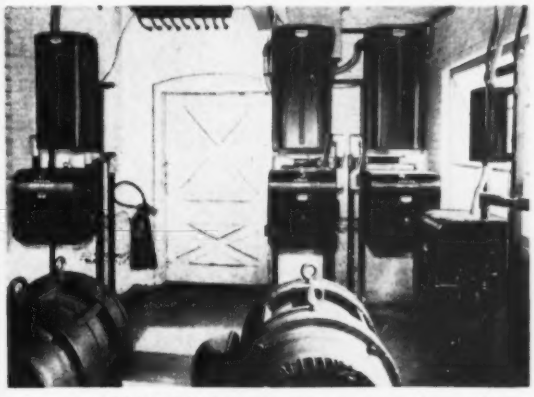
CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY



for FISHER at Fisherville, Mass. Cutler-Hammer Primary Resistance Starters are used to provide smooth starting as well as constant protection on these roving frames.

for EXPOSITION at Atlanta. Not only are Cutler-Hammer Card Controllers used on these individual motor driven cards, but Cutler-Hammer Motor Control is used throughout the plant.



for EDDYSTONE at Eddystone, Pa. Cutler-Hammer Safety Switches and Autotransformer Type Manual Starters stand guard over the performance of m.g. sets for cloth printing machines. Cutler-Hammer control widely used here.

for a LARGE SOUTHERN MILL. Cutler-Hammer Card Controllers are standard equipment in this great mill in North Carolina.

Not just inside the box

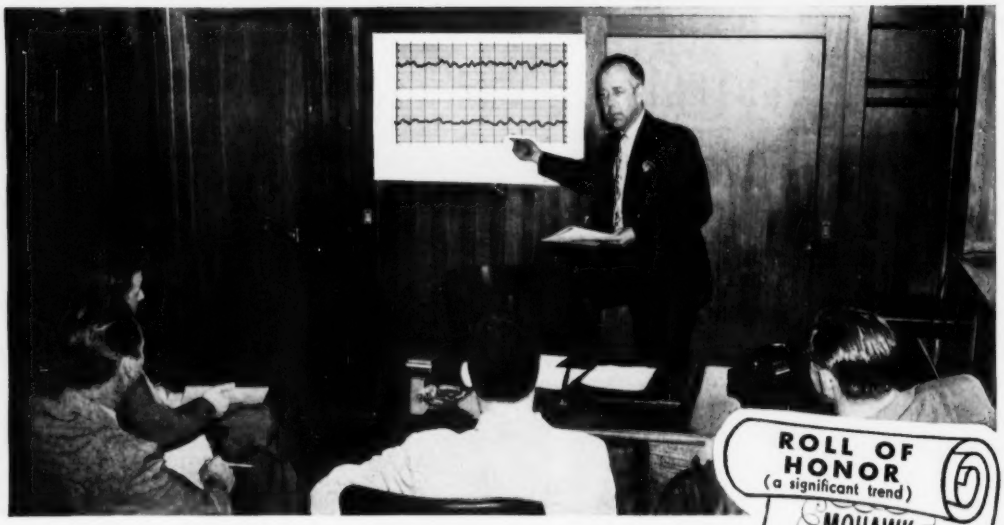
Motor control is never just a matter of what you see "in the box". To wise buyers, it is always a question of how much experience and how much "know-how" is behind it and *in* it. That is why Cutler-Hammer motor control specialization is so important to many such buyers. The control this company builds for the textile industry is the product of a specialization that dates back to 1892. Step by step, as electric motors developed, as their application spread from industry to industry, Cutler-Hammer kept pace all the way, designing and developing control to make these electric motors fully useful and dependable. That is why you will find features and values in Cutler-Hammer Motor Control for the Textile Industry that could have been gained in no other way. That is why mills that want maximum production insist on Cutler-Hammer control. Where the need for dependability is paramount, buyers naturally want the control that is world-famous for dependability. CUTLER-HAMMER, Inc., 1457 St. Paul Ave., Milwaukee 1, Wisconsin.

CUTLER-HAMMER CARD CONTROLLER

With integral drum type reverse switch

Here in one self-contained unit is all the control needed for a card . . . convenient pushbutton starting and stopping *plus* an integral reverse switch for cleaning and grinding. Card cannot be reversed accidentally or by any unauthorized person when controller case is padlocked. Easier to install. Easier and safer to use. Felt-gasketed against lint. Famous Cutler-Hammer Eutectic Element Overload Protection specially arranged to provide long starting time (required for cards) without loss of normal operating protection.

CUTLER-HAMMER
MOTOR CONTROL
C-H



The best sheets in the country are made in mills equipped with

SACO-LOWELL Combers

There is unquestionably a sound reason for this! To put our product on an equal footing, we must have equipment which has been proven in competition. Manufacturers of the best combed yarns use Saco-Lowell Combers. I have seen them in operation. I was impressed by the favorable reports I received concerning

the uniformity of the sliver

the high production per man-hour

the effective control of the noils

their low cost of maintenance

the overall satisfaction of the operators in charge

and the generally pleasing appearance of the comber.

☆ ☆ ☆ ☆ ☆ ☆ ☆

MANUFACTURERS OF COMBED YARNS will find it worth while to study their combing unit as a starting point on a Saco-Lowellizing program . . . since the result of the new comber equipment will be immediately apparent in a **better yarn, lower costs, and higher production.**

Our engineers will be glad to discuss this matter with you at your convenience. Just call our nearest Sales Office.

SACO-LOWELL

60 BATTERYMARCH STREET, BOSTON 10, MASS.

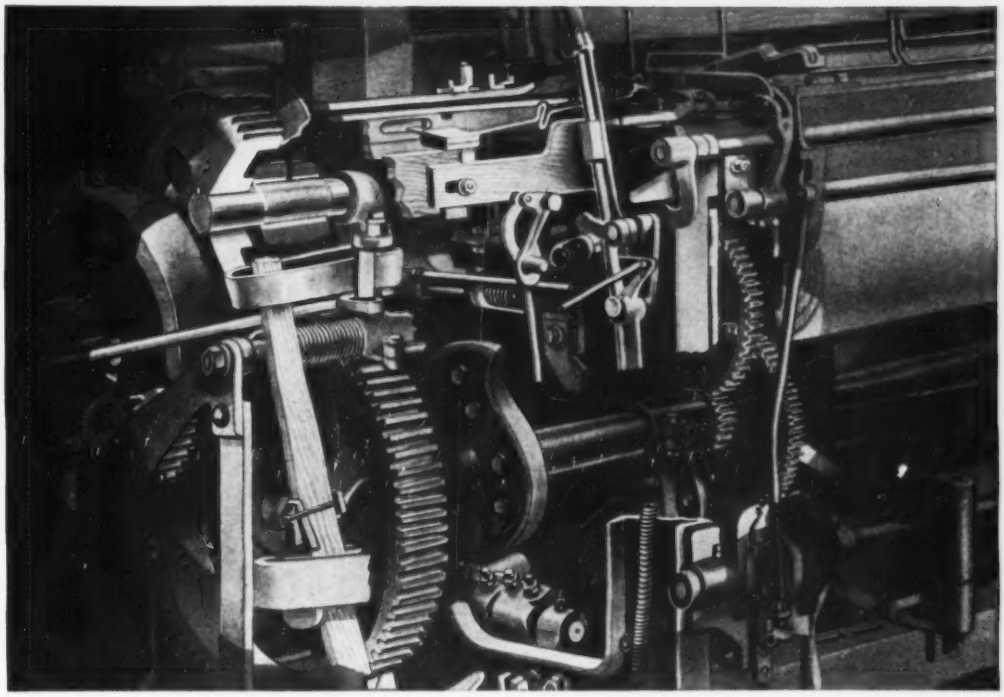
Shops at BIDDEFORD, MAINE and SANFORD, N. C.

SALES OFFICES: CHARLOTTE • GREENVILLE • ATLANTA

Inside Knowledge
on Lubrication Problems
—SHOCK LOADS—

This is One of a Series of Messages
on Common Problems in Your Mills

Torture Rack
FOR OIL AND GREASE!



THAT'S WHAT YOU might call your loom . . . a torture rack for oil and grease. For here, more than any other spot in your mills, oil and grease really take a beating.

On those cam, crankshaft and pick bearings, for instance, you get continued shock loads that seek to smash your lubricant out, cause metal-to-metal contact and wear. You also get contamination from flying bits of lint.

Gargoyle Vactra Oils and Gargoyle AA Greases are solving this problem in many mills. These special shock-load lubricants cling tightly to the metal, resist rupture, reduce wear to a minimum.

* * *

High-quality Mobilgreases perform the same job on gears, pick cams and pick balls, resist the constant pounding and the wiping, sliding action. Your looms stay on the job more continuously to produce more cloth at lower costs.

GARGOYLE Lubricants

SOCONY-VACUUM

SOCONY-VACUUM OIL CO., INC.
and Affiliates: Magnolia Petroleum Co.
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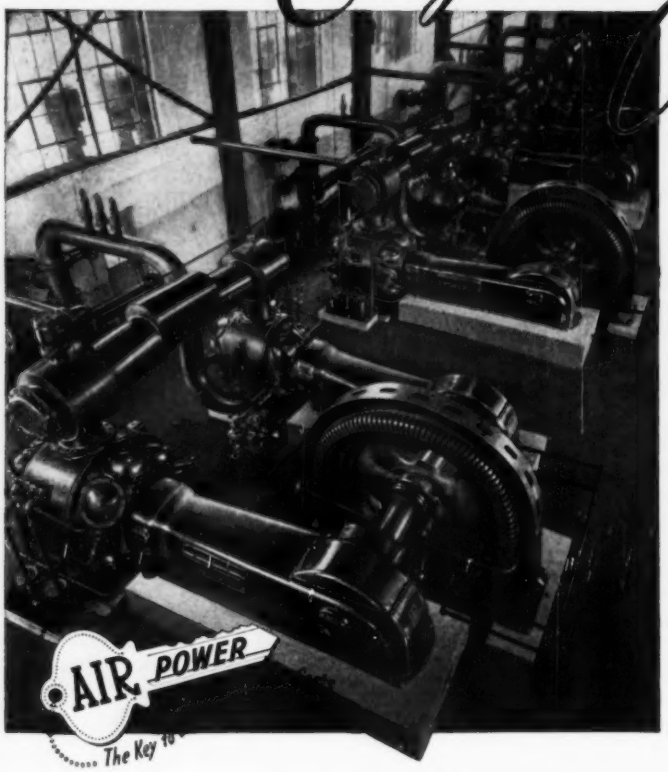
Socony-Vacuum Correct Lubrication

FOR EVERY MACHINE . . . EVERY OPERATING CONDITION

 For more information, write direct or use Reader Service post card.

BACK OF *Every* INGERSOLL-RAND *Compressor* ARE THESE *Super* values



This 2800-horsepower installation of Ingersoll-Rand *Class PRE Compressors* generates the Air Power for one of America's outstanding metal mines. It is typical of thousands of similar heavy-duty compressors that are so essential in practically every industry.

Whether they supply Air Power for Air Tools in factory, mine, or construction work, or compress hazardous gases at extremely high pressure in a costly process, the purchaser must rely upon the experience and judgment of the manufacturer for a dependable compressor that meets his specific requirements. To make sure you get the best, select an Ingersoll-Rand Compressor... backed by *Super* values

- **Tradition**...a 77-year old company that grew from the *two of the earliest* compressor builders in America.
- **Experience and Know-how** to build compressors for *any* pressure, *any* gas, *any* size, *any* service.
- **Facilities** *second to none*... for design, research, metallurgy, and manufacture.
- **Range of sizes** ... with *standardized* frames, running gears and interchangeable cylinders ... plus *special* cylinders, valves and coolers for special applications.
- **Flexibility of Drive** ... a *choice* of compressors powered by electric motor, oil, gas, or steam.
- **Record of Performance** ...thousands of compressors successfully operating in *every* branch of industry.
- **Design Features** that give you the best in efficiency, durability, dependability, easy operation, and low maintenance.
- **Trained Personnel** ...men who *know* Air Power... who build, sell, and service air drills and tools as well as compressors.
- **Progressive Policy**...*continuous* pioneering and development of both new and old products.
- **Service** ...with offices in principal cities *all over the world.*

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the color achievement of the month

Arden Forest

...by Pacific Mills

Standing on the threshold of 1950, this suit fashioned in Pacific Ravona – a new cross-rib fabric, 100% virgin wool — typifies the new color interest of the coming fashion season.

To preserve the color life of their Ravona fabrics, Pacific Mills uses Sandoz dyes, and depends upon Sandoz technical ability to keep a step ahead in color.

The latest addition to the Sandoz line is

BRILLIANT ALIZARINE LIGHT BLUE 3F Pat.

which brings a solution to the problem of hard-to-make-fast green shades. Using this brightest and fastest-to-light of the Alizarine Light Blue series with NYLENE LIGHT YELLOW 2G as a base, you will have no trouble with the light stability of your bright greens. *Write us for a sample.*

And for any chrome, acid or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you see in these Sandoz advertisements.

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Application laboratories and stocks at Boston, Philadelphia, Charlotte, Chicago, Los Angeles, Toronto • Other branches at Providence, Paterson and Montreal

SANDOZ *thinks ahead with textiles*

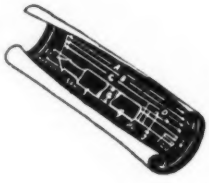
3 REASONS WHY

You should have flyers and spindles rebuilt at the same time

1. Both are rebuilt to original standard factory specifications so they fit perfectly and run smoothly. The flyers are finished with famous RCK Black or Rayon Bright and balanced at highest possible running speeds. Spindles are precision made to factory blueprint and tops are hardened to guarantee added years of service.

2. Flyers and spindles will be 100 per cent interchangeable from one frame to another.

3. You will be able to order standard flyers from the machine manufacturer and they will fit Ideal rebuilt spindles perfectly.



A quarter century of flyer and spindle experience at Ideal assures you an engineered rebuilding job second to none.

We furnish extra roving spindles and flyers while yours are being rebuilt.

IDEAL MACHINE SHOPS, INC.

Phones 4161 and 4391

BESSEMER CITY, NORTH CAROLINA

25TH YEAR OF CONTINUOUS SERVICE TO TEXTILE MILLS

An example of chaetomium globosum (cellulose destroying mold) magnified 76 times

There's no money in growing mold!

Mold and bacterial action can play havoc at almost any stage in textile production. Sizing and softening solutions, for example, are particularly subject to decomposition, resulting in loss of tensile strength, discoloration and uneven dyeing.

Dowicides, Dow's tested industrial germicides and fungicides, give you the kind of microbial control you've been looking for —reduce operational and storage losses to a minimum. For instance, sizing materials treated with Dowicides can be held in solution form for considerable periods without decomposing.

Don't put the bugs on your payroll—use Dowicides. Extensive Dow laboratory facilities are devoted to helping you with your problems. Contact the nearest sales office or write to Dow.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

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Houston • San Francisco • Los Angeles • Seattle
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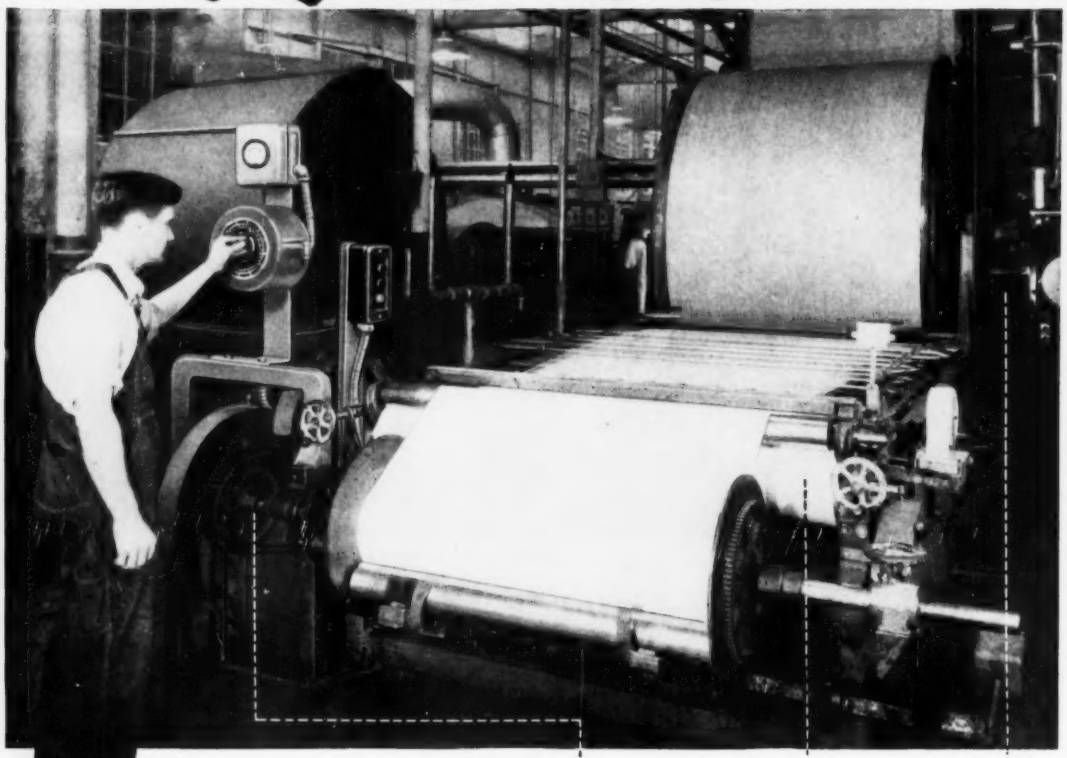
use the **Dowicides**

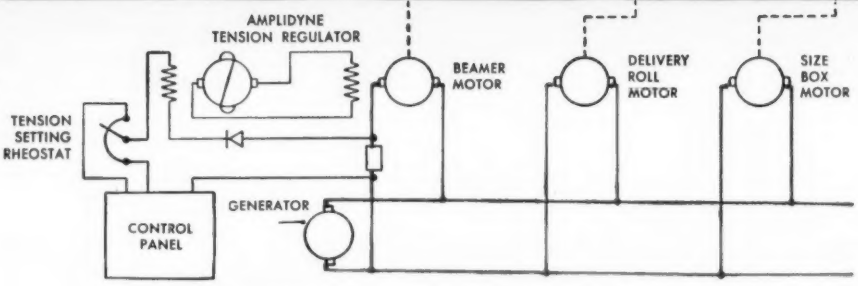
Germicides and Fungicides

DOW

CHEMICALS INDISPENSABLE TO INDUSTRY AND AGRICULTURE

The PAY OFF is





COMPONENTS OF A TYPICAL G-E SLASHER DRIVE

This simplified schematic shows the basic components of a typical G-E slasher drive with special emphasis on the beam motor and its control. As beam diameter builds up, the drive motor slows down automatically in order to keep yarn speed and yarn tension constant. This is accomplished by holding motor armature current constant during beam build up. Specific details on how this is done are contained in Bulletin GEA-5259. Write for your copy today!

in the weave room!

Many mill operators find that the "human error" factor combined with old-style drives and the limitations of mechanical arrangements is the cause of many difficulties which cut down weave room efficiency. Soft spots show up in the beam, ends break frequently, and yarn tension is irregular.

A General Electric slasher drive reduces these imperfections. Specifically, it gives you these important operating advantages:

1. Tension is automatically regulated over the entire beam diameter build-up.

2. Any one of a wide range of preset tension values between the size box and delivery roll may be easily selected.

3. More yards per beam are made possible by uniform tension control.

4. Running speeds may be easily preset by adjusting a single rheostat.

5. Acceleration and deceleration is smooth and even to prevent tension variations or yarn damage.

6. A wide speed range is provided, up to 6 to 1, or higher if necessary.

7. A low, preset, creeping speed is available for quick, easy threading.

8. The G-E slasher drive may be easily tied in with automatic moisture control.

9. Maintenance of slip clutches, line shafts, and mechanical speed changers is eliminated.

If you are considering a new slasher installation, it will pay you to discuss a G-E drive with your machinery manufacturer. Or, if you're modernizing, get in touch with your local G-E textile mill specialist. For more details, write for Bulletin GEA-5259, *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

DRIVE SYSTEMS FOR TEXTILE MILLS

You can put your confidence in—

GENERAL ELECTRIC

654-5

The Fleet Line

A NEW LAUNCHES

MULTI-DOLLY CONTINUOUS WASHER

IT'S BETTER IN 8 WAYS:

1. Stainless steel construction throughout.*
2. AC-DC drive with rheostat speed control — NO SIDE SHAFT.
3. Positive counter current flow, with constant uniform predetermined liquor level in each tub.
4. New slope of tub for smoother operation and fewer stops for rethreading.
5. Each unit driven by D.C. motor and kept in step by tensionless compensators.
6. Folding or plaiting cleat rolls provided for smoother operation and uniform treatment.
7. Flow of water and liquor stops automatically when machine stops, effecting increased hot water savings.
8. Cloth fully protected against damage by electric stop motions.

*Old style iron frame with wood lining available at lower cost.

Tell us your continuous washing problem and let us make recommendations

RIGGS AND LOMBARD, INC.

FOOT OF SUFFOLK STREET, LOWELL, MASS.

The Fleet Line — A complete line of modern equipment to successfully handle present day wet-finishing, carbonizing and dyeing requirements.

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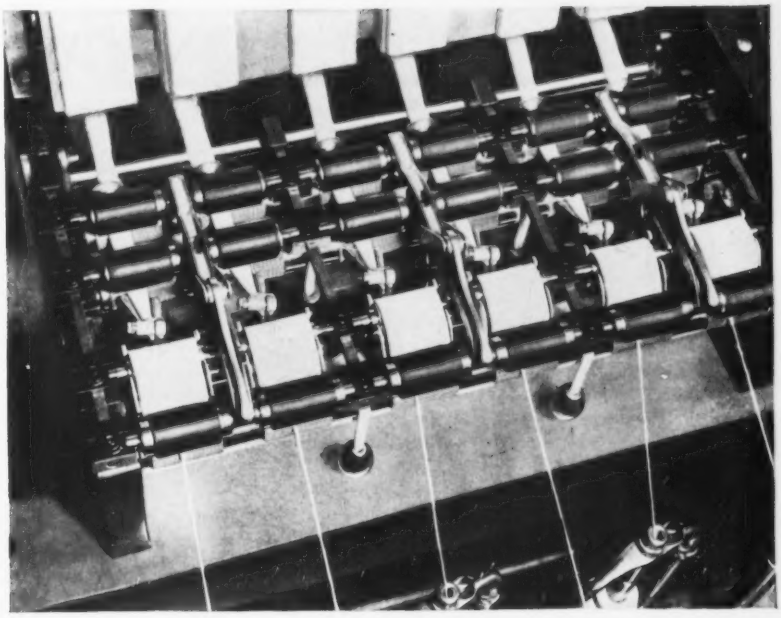
If you spin your own yarn

You need . . .



WHITIN Single-Process Super-Draft ROVING FRAMES *because...*

Super-Draft is the only single-process roving frame that will satisfactorily control mixed fibres of different types and varying lengths. Uniform distribution of various fibres throughout the strand, accomplished through special aprons, special guide plates and special trumpets, results in even rovings and yarn and high quality fabrics. Staples of varying lengths including rayon, cotton and wool or any blend of these fibres can all be satisfactorily handled. Besides its versatility and product excellence, the Whitin single-process, Super-Draft roving frame offers your mill definite advantages from a cost standpoint: reduction in number of processes and floor space requirements... elimination of unnecessary machines . . . fewer spindles . . . economy in yarn costs and improvements in yarn quality. It will pay you to investigate.

Write today for complete information on Whitin Super-Draft and Inter-Draft Roving Frames.

Whitin MACHINE WORKS

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CHARLOTTE, N. C. • ATLANTA, GA.

MILL MODERNIZATION

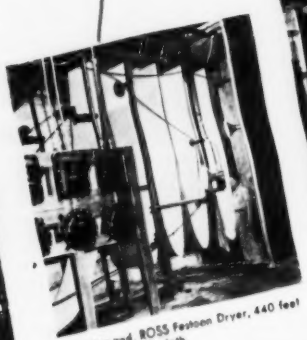
calls for the modern air systems

ROSS SYSTEMS

In practically all of the major new plant, expansion and modernization projects during the past few years, the more advanced types of AIR systems have been installed. To insure maximum production efficiency and operating economies, ROSS Air Systems are being successfully employed to effectively confine and remove vapors from processing equipment and speed drying, to prevent spoilage of goods from condensation and drip from ceilings and walls, to eliminate fog and provide comfort cooling for improved working conditions—to heat, cool, dry and ventilate by means of controlled air.

These modern ROSS Air Systems are not merely a grouping of units but complete, carefully engineered systems designed to form an integral part of the plant's processing equipment. They embody, as required, panel constructed hoods for dye jigs, dry cans, etc., vapor absorption and exhaust apparatus, air make-up, roof heating and ventilating ducts, waste heat recovery apparatus, cooling systems for aisles, motors, generators, etc. and room air conditioning. Long experience with industrial air handling problems is reflected in the advanced design and construction of ROSS Air Systems for textile plants. Let us survey your requirements. Contact our office nearest to you.

ROSS Transite Hood over Dye Jigs. Note ducts and outlets for comfort cooling in operating aisles.



Entering end, ROSS Festoon Dryer, 440 feet long, for awning cloth.

ROSS Drying and Fusing Oven, 150 feet long, for organisol and pyroxylin — leaving end.

ROSS Air System duct distributing heated air over ceiling.

ROSS SYSTEMS FOR FINISHING PLANTS

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COMPARE YOUR FILLING WINDING PRODUCTION WITH

ABBOTT MACHINE PRODUCTION

The Abbott Circulating Winder produces 150 to 175 pounds of woolen yarn per hour from giant mule bobbins onto wood cones with one operator per Winder.

The Abbott Automatic Quiller produces 120 to 150 pounds of wound filling per hour from the wood cone supply packages onto loom bobbins with one operator per Quiller. Only two operators with these two Abbott machines produce 1200 pounds of wound filling per 8-hour shift. Investigate this Abbott method. You'll find it takes only a small initial investment in Abbott Winding Machinery to assure fast, low cost operation with better weaving loom bobbins.

ABBOTT MACHINE COMPANY

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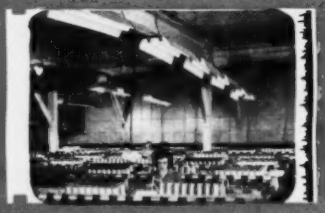
GENERAL ELECTRIC "TEXTILES

Dramatically– it presents the latest facts on these vital topics!



Mill Modernization
. . . lighting, air conditioning, better acoustics, better use of color, etc.

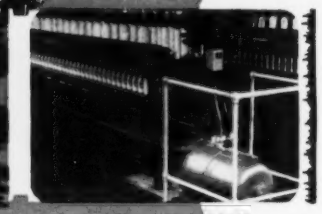
Finer Quality Control
. . . how it is being obtained in leading mills of every type.

Power at the Point of Use
. . . individual electric drives for a wide range of machines.

Materials Handling
. . . and the ways in which it can cut your manufacturing costs.

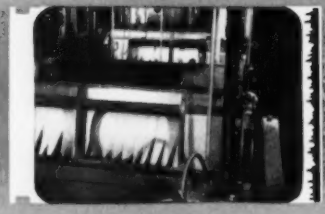
it's authentic!

Filmed under actual operating conditions in mills like yours!



Higher Controlled Speeds
. . . as a way to increase the productivity of your machines.

Modern Power Distribution
. . . and the part it plays in cutting over-all production costs.



Continuous Processing
. . . two machines or twenty in one efficient, cost-cutting range.

New Processing Methods
. . . and their importance in opening new textile markets.

ANNOUNCES

UNLIMITED"

A new, full-color sound movie on

Textile Mill Modernization

PACKED WITH QUALITY-IMPROVING, COST-CUTTING IDEAS!

With material and labor costs up and competition tougher, you don't want to miss a single opportunity to cut your manufacturing costs and improve the quality of your product. That's why we know you'll want to see "Textiles Unlimited." General Electric's new full-color sound movie on how textile mills are modernizing.

Practically every phase of modernization is covered in this dramatic, yet highly factual presentation. Lighting, air conditioning, power distribution, machine drives, quality control—these are only a few of the pertinent subjects treated. What's more, the ideas shown *in action* are practical—this film was made in mills located in every important textile area.

Don't delay! Arrange now to see this film. Mail the coupon—we'll do the rest. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

Here's how you can arrange to see this movie *and* get a FREE MODERNIZATION MANUAL at the same time.

Mail the coupon below to let us know you would like to see "Textiles Unlimited." We'll also send you a FREE copy of "How Textile Mills Are Modernizing," a 100-page illustrated reference manual for textile mill modernization. (Additional copies at cost—$1.25)

General Electric Co.
Section D654-8, Apparatus Dept.
Schenectady 5, N. Y.

Yes—I'd like to see your new modernization movie "Textiles Unlimited." Also, please send me a FREE copy of "How Textile Mills Are Modernizing" (Bulletin GEA-4998).

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Heart of a Sweet-

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Most complete line of V-belt drive equipment backed by greatest engineering experience in the industry. New Vari-Pitch Automatic Sheave changes speed when motor is moved. One hand makes all changes without stopping machine. 100% speed range. 1½ to 40 hp.

DIELECTRIC HEATER FOR FAST DRYING

Allis-Chalmers dielectric heaters are setting new standards of speed and quality in rayon cake drying and twist setting. Heat any size or shape of textile package evenly from core to surface. Dries 1 pound cake of rayon in 30 minutes. Engineering and cost studies made without obligation.

Running Loom

Built to beat today's high maintenance costs... made to give you top output from both new and modernized equipment. Check these advantages:

☛ REDUCED BEARING MAINTENANCE
Factory lubricated and sealed ball bearings get just the right amount of the right grease. Run without attention for years. No cost for lubricant and lubrication over long periods of operation.

☛ SMOOTH RUNNING UNDER PULSATING LOAD
Motor is smooth running under constantly shifting loads of loom operation. Extra stiff cast iron frame resists distortion under strain and keeps bearings in perfect alignment.

☛ EXTRA OVERLOAD CAPACITY FOR BREAKING-IN
Allis-Chalmers Loom Motors have the extra power needed for efficient operation during the stiff break-in period. You get full production immediately from looms equipped with Allis-Chalmers Loom Motors.

For Modernization or New Looms

When modernizing to increase production and to lower cost . . . or when buying new looms . . . specify Allis-Chalmers Loom Motors for that smooth "sweet running" sound that means efficiency and higher profits. In sizes and speeds to meet your requirements.

Quick-Clean Textile Motors

Especially designed for general textile mill use, these Allis-Chalmers motors have wide open air passages, smooth internal surfaces and efficient fans that blow out lint and dirt. They will not clog and overheat. Sealed bearings protect surroundings from grease, require no attention for years. Sizes to suit the usual requirements of spinning frames, twisters, etc.

A-2830

Texrope, *Quick-Clean*, and *Vari-Pitch* are Allis-Chalmers trademarks.

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Get complete information on these and other cost-saving A-C products for the textile industry. *Write for these free bulletins today.*

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Texrope Drives 20B6051
Vari-Pitch Automatic Sheave 20B7223
Dielectric Heater 15B6431
Power Generating Equipment, Transformers, Circuit Breakers, Power Distribution Equipment 25B6150

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ALLIS-CHALMERS

Originator of the Multiple V-Belt Drive for the Textile Industry

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See the following pages for more news!

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Caps, Tubes & Spindles
Card Clothing: all types
Card Grinding Rolls
Chains for Cotton Flat Cards
Clearer Plush
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Condenser Tapes
Doffer Comb Blades
Drawing Fliers
Drawing Spindles
Emery Cotts
Emery Fillet
Gears, Change, all types
Gill Box Aprons
Gill Box Bearings: all types
Gill Box Calender Rolls
Gill Box Conductors
Gill Box Drawing-Off Rolls
Gill Box Fallers & Pins
Gill Box Front & Back Cams
Gill Box Gears, all types
Gill Box Saddle Blocks
Gill Box Saddles
Kaye Oil Cans
Lubricators, Arragg Spindle
Mule Rope, Cotton
Mule Rope, "Columbian" Nylon
Parchment, Textile
Porcupines
Porcupine Pins
Rings, all types
Roller Chain & Sprockets
Roller Felt
Rub Aprons
Spindles: Rabbeth & Ball Bearing
Tapes: Twisting & Spinning
Thread Spools, Wooden
Top Rolls: Ball Bearing & Ordinary
Yarn Guides, Plastic and Porcelain

Gill Box Screws: Intersecting & Open

Condenser Aprons

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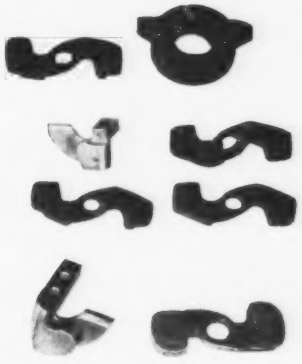
THE CENTRIF-AIR MACHINE CO., INC.

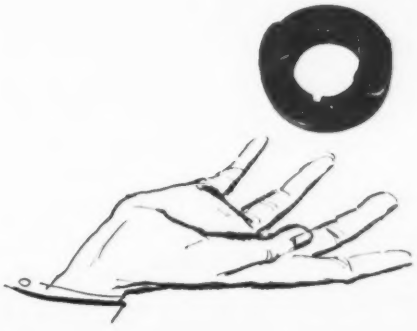
HOLDSWORTH GILL SCREW CO., INC.

INTERSECTING TYPE CAMS



HOLDSWORTH CAMS REDUCE FALLER WEAR

With Holdsworth Cams it's no trick to keep fallers dropping accurately. Machined from milled and cold drawn tool steel especially hardened to match faller ends; profiled to micrometer accuracy; tempered to unvarying hardness; Holdsworth Cams reduce end wear and consequent uneven transportation of the fallers. There is a Holdsworth Cam for every type of gill box but for the smoothest teamwork, put in balanced units of Holdsworth Cams, Screws and Fallers. May we send you quotations?



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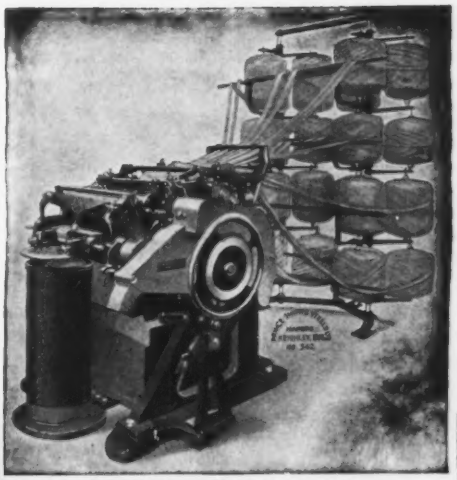

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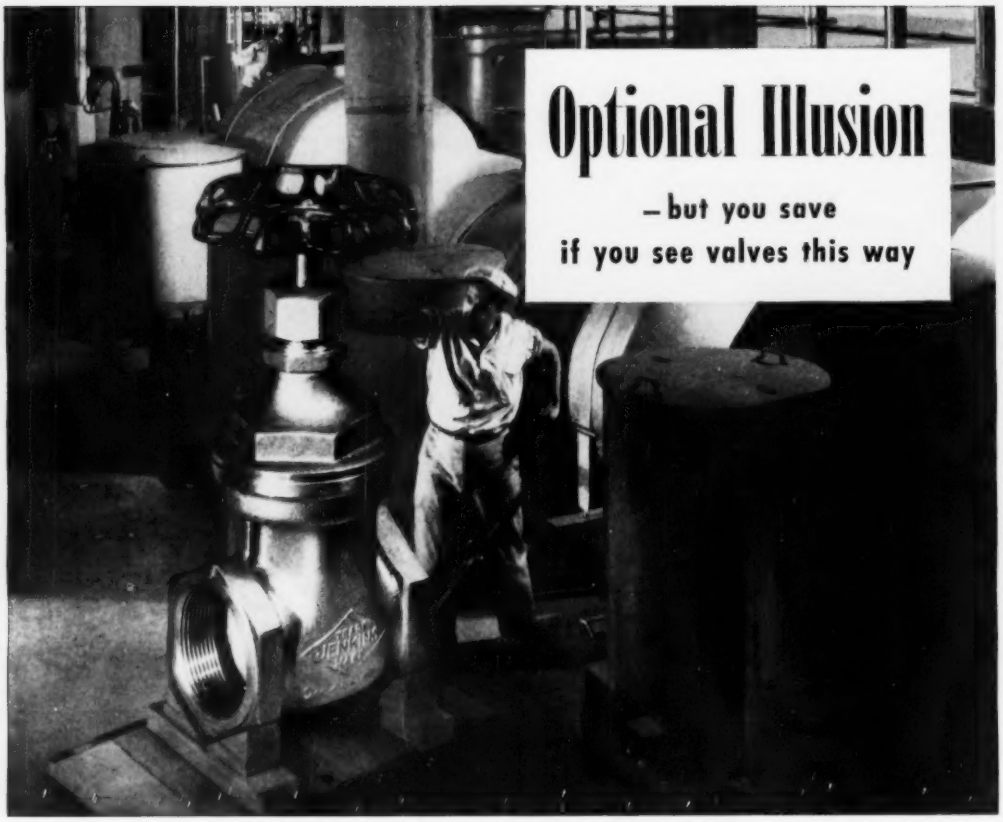

THERE ARE TWO WAYS of regarding the valves in your plant. You can think of the relatively small cost of a single valve, and dismiss them as a minor, "petty cash" investment. Or, you can think of *all* valves in your plant as *one* valve, as pictured, by photo-magic, in this pharmaceutical plant, and see them in proper perspective.

YOU'LL FIND IT PAYS to take the latter view, for in *any* plant, *any* building where fluid control is involved, valves, collectively, are as important, in terms of investment and operating expense, as larger plant units, and should be selected with the same sharp eye to quality and economy.

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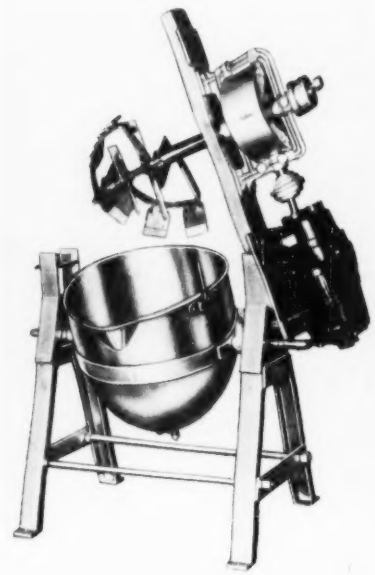
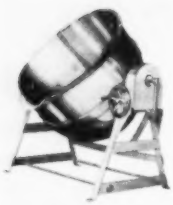
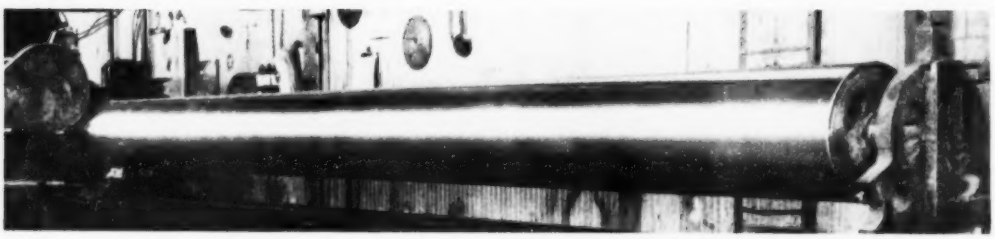
A complete line of stainless steel steam jacketed kettles, tilted or stationary for color dyes and chemicals from 25 gallons to 300 gallons. DOUBLE MOTION SCRAPING BLADE AGITATORS with hinged scraper blades continuously transferring heated film from the hot wall of the kettle to the center where the cross arms travelling in the opposite direction mix the heated film with the cooler center for a uniform temperature and color. No better method—no better line of kettles on the market today. Your inquiries invited.

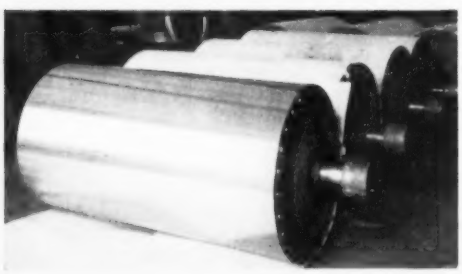




Stainless Steel Roll Covering



Covers for new or existing rolls in any thickness or width, applied by a patented process. A process that insures a tight, smooth, rigid roll that will not sag. The Unistel roll cover is of solid stainless steel applied by a combination of pressure and welding, then machined and polished to a perfect finish. *UNISTEL* roll covering not only gives you a longer life than the original roll covering and lower maintenance costs, but it saves you a sizable amount of money. Your inquiry invited.



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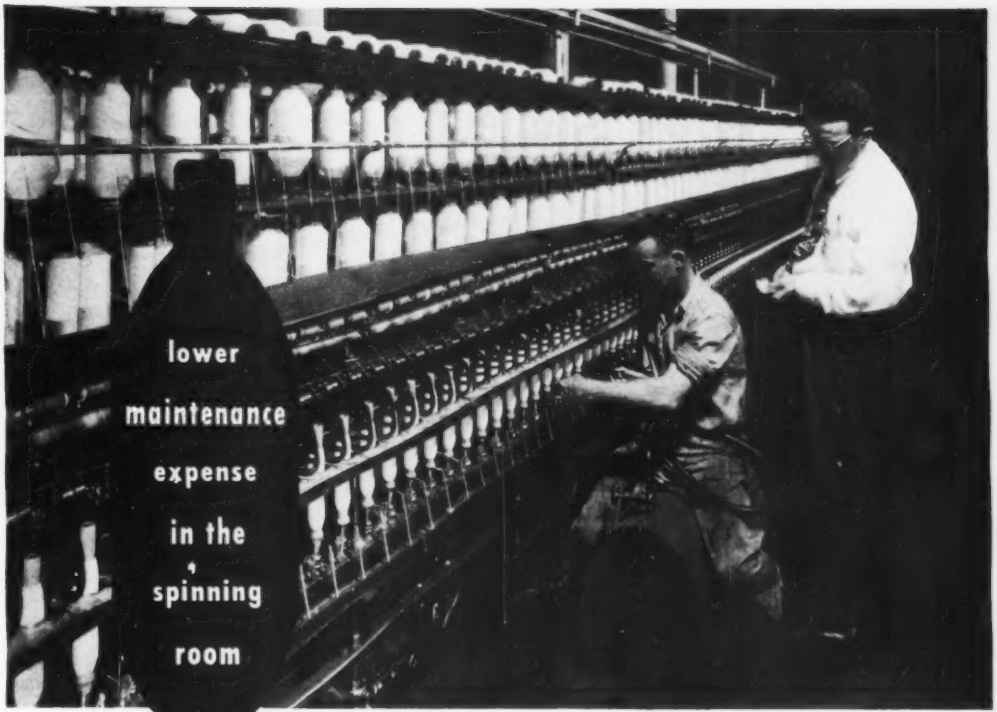

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With a background of thorough training and broad practical experience, he can be of real assistance to you in improving your lubrication practice.

He will recommend the lubricants and application methods exactly suited to your equipment and operating conditions. Then, periodically, he will check the performance of each machine and suggest any changes in lubrication practice that are necessary to provide for new conditions.

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Brown Electric Flow Meters With Air Control . . . for all your fluid flow control problems.

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THE BROWN approach to instrumentation for continuous dyeing can be stated very briefly. It includes a complete line of products for your every need . . . plus "proof of the pudding" experience which spells user confidence and continued acceptance.

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Engineered into your process, they afford better reproducibility in shading with savings in steam and chemicals . . . through completely automatic operation!

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MINNEAPOLIS Honeywell — *Advanced Instrumentation* FOR THE TEXTILE INDUSTRY — BROWN INSTRUMENTS

WHERE *Flexibility* COUNTS . . .

FOSTER MODEL *102*

Yes, you've got to give the palm to Foster 102 for its flexibility in performance and product. And here's why . . .

One-fibre specialization in the textile industry has gone the way of the one-horse shay. Monogamous mill marriages to cotton, wool or worsted have been broken up. Cotton mills are now running worsted or blended yarns, while woolen and worsted mills are producing blends of many different fibres, both natural and synthetic.

This trend to versatility and multiple operation extends to the choice of modern winding equipment. Only a winder that can meet TOMORROW'S requirements, as well as TODAY'S, for types and counts of staple yarns can keep you abreast of competition in the present dynamic market. In addition to its other qualifications, Foster Model 102 is the only winder of its type which has this proven flexibility.

FLEXIBILITY FEATURES OF THE FOSTER *102*:

1. Winds any type or count of staple yarn. The same type of traverse mechanism which handles cotton yarn will handle worsted yarn without excessive wear. The change-over is quickly and easily made.
2. Produces any cone taper commonly used and any angle of wind from 9° to 18°.
3. Can be equipped to wind knitting cones, warping cones, parallel tubes, dye packages or short traverse cheeses. Winds cones on one side of machine and tubes on the other, if desired.
4. Winds dyed yarn even when damp; also conditioned yarn.
5. Can be built to wind up to 7" traverse.

Bulletin A-95
on
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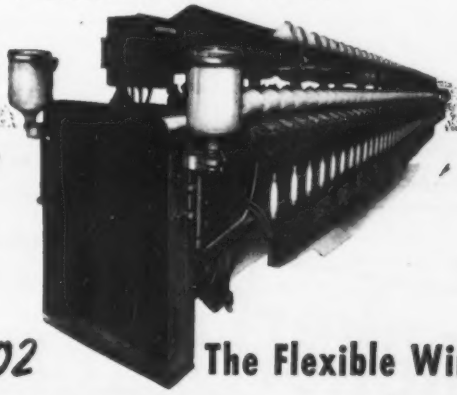

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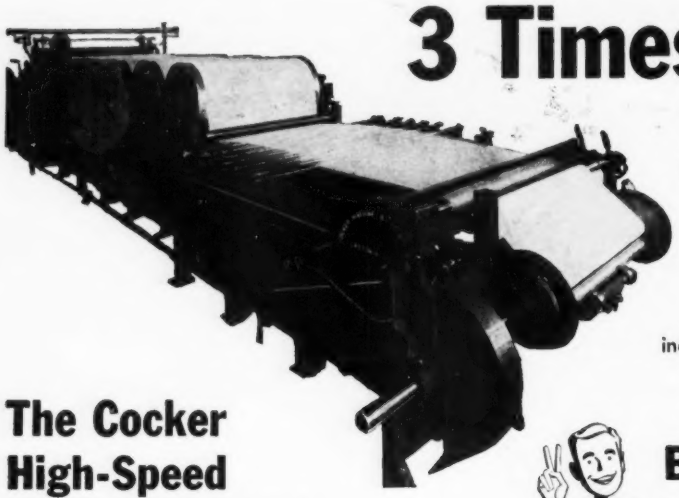
Westfield, Massachusetts

Southern office, Johnston Bldg., Charlotte, N. C., Canadian Representative, Ross Whitehead & Co., Ltd., University Tower Bldg., 660 St. Catherine St., W., Montreal, Que., European Representative, Muschamp Taylor Ltd., Manchester, England.

FOSTER MODEL *102* The Flexible Winder

FOR COTTON, MERCERIZED, WOOL, WORSTED, MERINO, SPUN NYLON OR RAYON YARNS

9 Cylinders are 3 Times Better



This Cocker 9-Cylinder Slasher is as superior in operation and results to the old-fashioned two- and three-cylinder types as a six-cylinder automobile is to a two-lunger.

The Cocker High-Speed 9-Cylinder Slasher

Better Drying

Each cylinder has its individual heat control. Each can be set at a different temperature, graduated from very hot to exactly the right finishing temperature.

Stronger Warps

Cocker Slashers never "take the life" out of yarns. Heat can quickly be drawn out of cylinders when work stoppages occur, thus preventing overdrying of the yarn which is in contact with them. This is impossible with old-style slashers because of the tremendous heat stored in each large cylinder.

Greater Production

Flexible controls permit higher and continuous speeds, whereas old-style slashers usually run on the low side of the speed range desired. Down-time is kept to a minimum because all parts are easily accessible and easy to handle or replace when necessary.

We can replace your present cylinders by installing a new 9-Cylinder unit between the other sections of your present slasher.

The Cocker 9-Cylinder Slasher handles all types of yarns—cottons, spuns, and filaments.

Modernize. Replace your old-style slasher with new Cocker equipment. Write or wire for full details.

Cocker Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

MADE OF U·S·S Stainless Steel

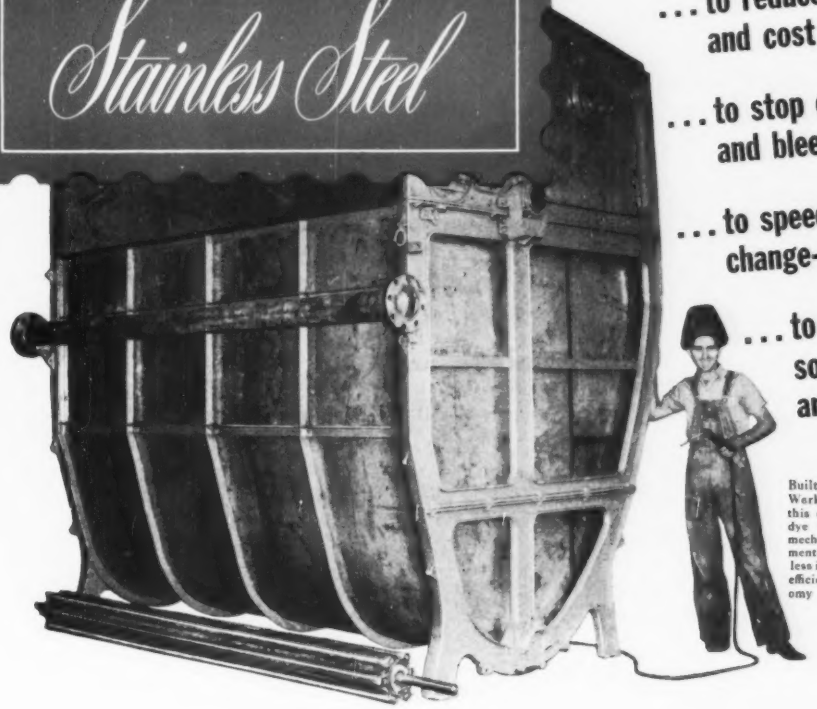
. . . to end rust and corrosion

. . . to reduce time and cost of cleaning

. . . to stop color-lag and bleeding

. . . to speed up change-overs

. . . to prevent soap stains and canker



Built by the Sims Metal Works of West Point, Ga., this combination wash and dye vat is typical of the mechanized textile equipment in which U·S·S Stainless is used to insure greater efficiency and greater economy of operation.

STAINLESS STEEL construction like this has become almost taken-for-granted in the new, advanced design equipment now being produced for textile mill service.

That's because Stainless Steel equipment has consistently paid off in better results, bigger production and lower maintenance costs. Stainless Steel does so much more, does it so much better, and lasts so much longer that it has proved by far the cheapest material that can be used.

We believe it significant that so much of this time-saving, cost-cutting equipment is being built with U·S·S Stainless Steel. The ability of this *perfected* Stainless to meet requirements that are new and often unusually severe, and to insure top performance in such applications, is due to two things: First, U·S·S Stainless is available in a variety of analyses that will meet almost any service condition. And, second, its uniformity in composition, in finish, and in fabricating qualities allows wide latitude in design and permits the use of the most advanced manufacturing techniques.

Our engineers are specialists in Stainless Steel. You will find their help invaluable in determining exactly what type of U·S·S Stainless will do the best, most efficient job. Write for their assistance, outlining your problem, to United States Steel Corporation Subsidiaries 2106 Carnegie Building, Pittsburgh 30, Pa.

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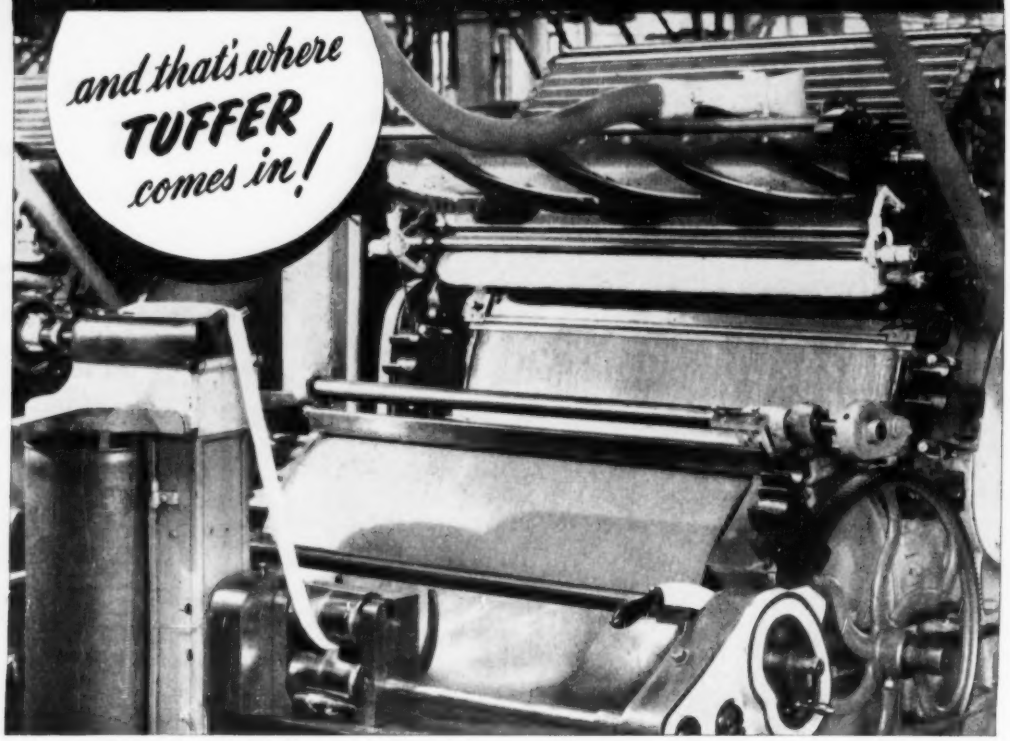

THE quality of the material produced by your cards depends upon the quality of your clothing . . . that's why it's wise to use TUFFER!

The Tufferizing Process—developed and exclusively owned and used by Howard Bros.—cuts and forms wires with an accuracy never before obtained in the making of card clothing. The wires—tough, strong and of even temper—are formed with precision and placed with hairline accuracy in the famous Tuffer Foundation . . . when drawn on the cylinder they fit snugly—**points perfectly parallel and every one in place.**

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IMPROVES PRODUCTION ALL ALONG THE LINE

*COLOR

For maximum production . . . top efficiency . . . lowest operating cost, give your machines the finest in lubricants—give them Tycol oils and greases.

Tycol lubricants are made to meet every lubrication need of industry—from roll neck greases for steel mills to spindle oils for textile plants.

Each Tycol lubricant is subjected to rigid tests during manufacture. This control assures the required lubrication characteristics—*COLOR, penetration, viscosity, to name a few—for maximum performance of that particular product. At every step from selection of crudes to blending of the finished product, Tycol lubricants provide maximum lubricating efficiency which means greater economy, longer life for every type of equipment.

Tide Water Associated will be glad to assist you in selecting the Tycol lubricant best suited to your specific need. Call or write your nearest office for further details.

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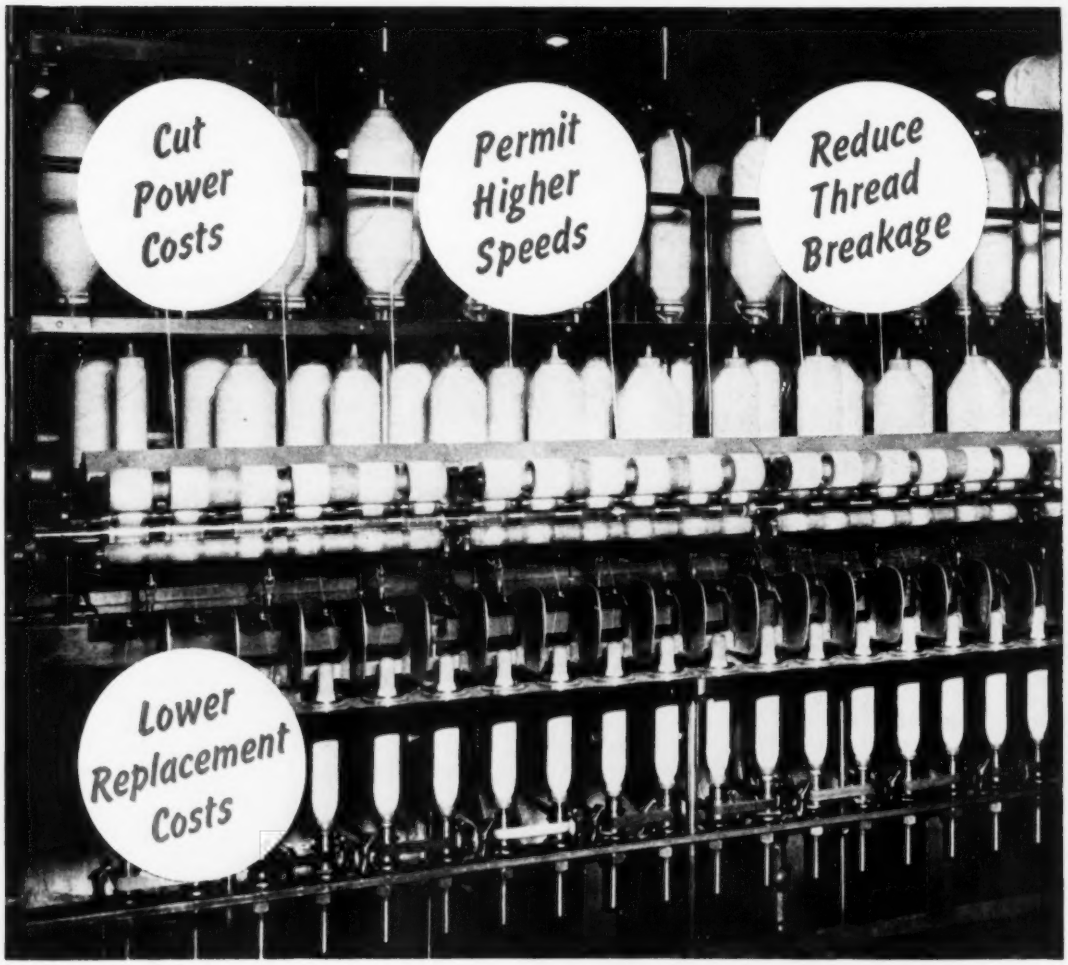

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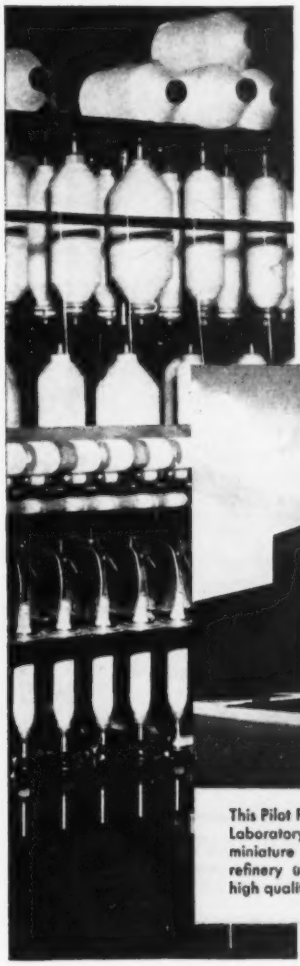
Up To Two-Thirds



In a textile mill, wear of bolsters on the spinning frame allows spindles to wobble and causes uneven draft . . . which affects the perfection of the yarn. Replacements of worn bolsters add to production costs.

When Sinclair LILY WHITE OIL AX, BX or CX is the lubricant, bolster wear is greatly diminished. Mill records show that LILY WHITE OILS, improved and specially compounded, reduce bolster wear as much as TWO-THIRDS . . . resulting in fewer bolster replacements, greater perfection of products and lower cost of production.

This Pilot Plant, part of the great Sinclair Research Laboratory at Harvey, Ill., provides space for six miniature operating replicas of commercial-sized refinery units. Continuous research explains the high quality of LILY WHITE and other Sinclair Oils.

Making a study of crystal structure of catalysts, this Sinclair researcher at Harvey uses physical chemistry to develop refinery techniques in a never ending effort to bring industry better petroleum products at lower costs.

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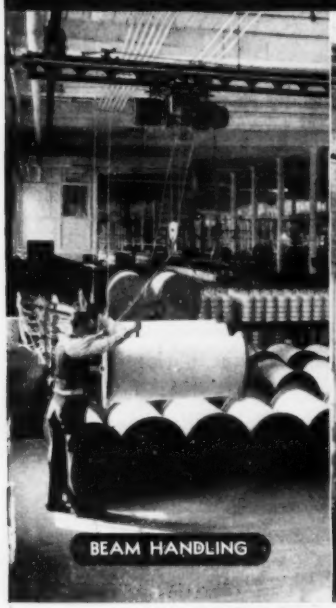
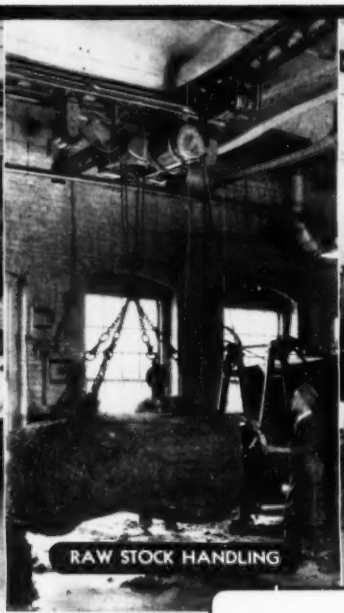
TEXTILE MILLS BOOST EFFICIENCY *with* CLEVELAND TRAMRAIL



BEAM HANDLING



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CLOTH HANDLING — AUTOMATIC DISPATCH

Efficiency — meaning costs and output of product — has been greatly improved in many textile mills with installation of Cleveland Tramrail, even with other production facilities remaining the same.

During the period following the war it is predicted that the use of Cleveland Tramrail will be accelerated tremendously because textile mills will require more efficiency in operation than ever before if they wish to remain in a favorable competitive position.

No other machinery offers as great returns for the small investment required as overhead materials handling equipment.

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BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy.

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OVERHEAD MATERIALS HANDLING EQUIPMENT

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IT'S A BRAND NEW IDEA

PLUS NEW UNIT MACHINE

that puts the idea to work for you

HINNEKENS REVOLUTIONARY

COMBINED CONTINUOUS PROCESS

(Machine and processing patents are being applied for)

for

DESIZING OR CAUSTICIZING
BLEACHING
SCOURING and CLEANING
of SYNTHETIC YARN FABRICS

COMPARATIVE TIME SCHEDULES:

- For the new process—40 seconds for desizing, bleaching, and preparing for scouring.
  —4 to 5 minutes for scouring, cleaning, etc.
  —one continuous processing—no transfer of goods.
- By the old methods—4 to 6 hours and several transfers of goods.

Labor Required:

- For the new process—3 men.
- For the old process—6 men.

Other Advantages of This New Process:

1—At no time during the critical processing phase are goods subjected to lengthwise or crosswise stretch.

2—Goods for printing on white grounds never need see the dyehouse.

3—Affinity of fabrics for dyestuffs in dyeing and printing is considerably improved.

4—Dyestuff draws perfectly even—there's no blotching.

5—Silk may be degummed in 1 5th of the usual time required by old process.

6—If desired this unit in part can also be used in conjunction with the Hinnekens Loop Boil-Off Unit.

More than one million yards have been successfully processed by this new method.

(SEND FOR COMPLETE DETAILS AND DESCRIPTION.)

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HINNEKENS

Exclusive Manufacturers of this Machine

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here's a man who can help you out

WHEN you are in the middle—between bad-running spinning or twisting and a management that is pressing for better production and quality—it's a good time to talk to a Victor Service Engineer.

He has been in on thousands of spinning and twisting problems, and seen them through to a successful solution. He can not only recommend the right traveler for the job, but can often make other suggestions for improving yarn quality and production that will change front office complaints to compliments.

Now, in the face of increasing competition for peacetime markets, you need his resourceful cooperation—the friendly, result-getting Victor service that has made Victor Travelers standard for over 8,000,000 spindles of spinning and twisting throughout the industry.

New fibers, new blends that increase your problems are seldom new to the Victor Service Engineer. You find him ready to share his important information on any fiber. Write, wire or phone the nearest Victor office . . . for prompt service.

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IT'S THE SPREAD THAT COUNTS

To the man in the duck blind, that needs no explanation.

He knows it's the shotgun's spread of fire that **enables him to** cover the area where the ducks **are rising.**

The *spread* that gives bleachers and dyers a **wider operational** range is just as important to **their de-sizing operations** as the spread of fire **is to "good hunting."** So many of them prefer **the all-purpose** de-sizing agent, Diastafor—**Type L, because it works** well in an unusually wide range of temperatures and pH, which meets all enzyme de-sizing requirements.

Probably no two lots coming to your mill are alike. There are always variables—in water or in sizing formulas—to be considered. Sometimes some unforeseen factor threatens to turn a job into a "problem lot." That's when Diastafor's "spread"—its flexibility—counts so much.

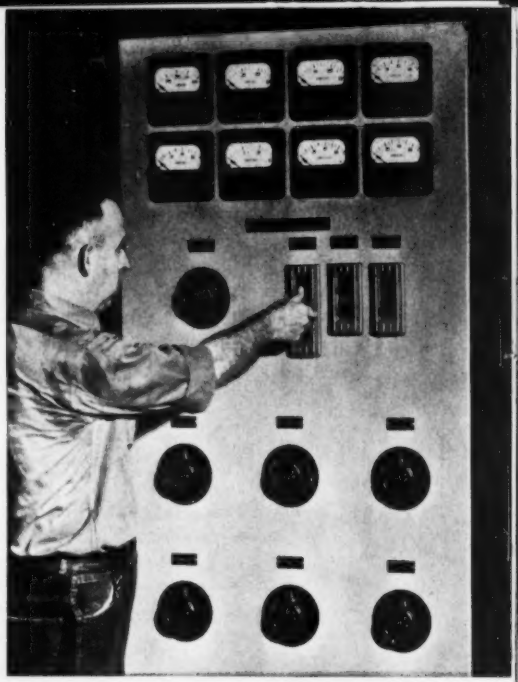
Diastafor—Type L is practically fool-proof in operation . . . it gives a fine, flawless finish under widely varying conditions.

Diastafor affords the same uniformly good results whether you are working with cottons, rayons, or mixed goods. You get the fine hand you look for in your finished goods. Diastafor helps keep dyeing even and unshaded, without streaks or blemishes. It can be used satisfactorily in the continuous process.

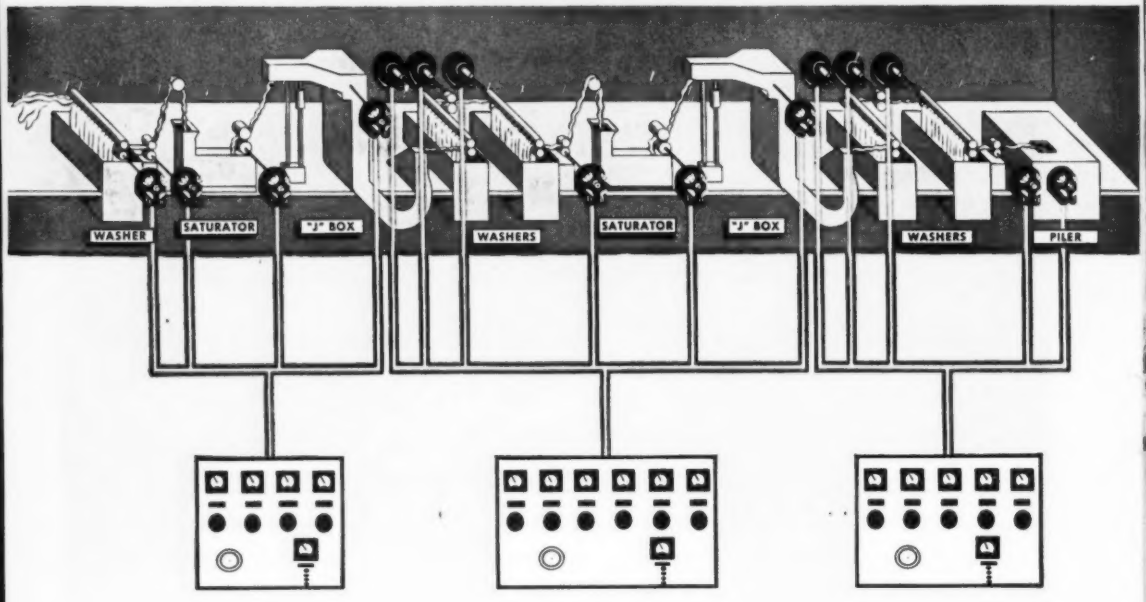
In addition to Type L, Diastafor de-sizing agents are available in a number of different forms. Diastafor's leadership for more than 40 years has been built on its ability to satisfy almost any de-sizing need.

We'll be happy to furnish further information and prices. Standard Brands Incorporated, *Diastafor Department*, 595 Madison Avenue, New York 22, N. Y.

YOU CAN BE SURE.. IF IT'S Westinghouse



IN THIS CONTINUOUS BLEACHING RANGE DRIVE complete, convenient control is provided by this operator's control station. One of these stations is used to control each section or group of sections in a continuous range system. Features include push-button stations at one point for control of the section, an instrument for indicating the speed of the section, ammeters for indicating load on each motor, rheostats for adjusting these loads, and a master rheostat for adjusting the speed of the entire section.



FLEXIBILITY OF OPERATION is an important feature of the Westinghouse drive for this two-stage continuous bleaching system. In multistage continuous systems, Westinghouse drives permit the by-passing of any stage. Centralized control for the complete machine can also be provided.

Simplified Operation

OF CONTINUOUS RANGE DRIVES UP TO 375 YPM

When you change over your textile finishing processes to the new, continuous systems, there is no need for the drives to be complicated. They can—and will—be simple to operate and yet offer as much flexibility of control as you require, if they are Westinghouse adjustable-voltage, d-c range drives.

Westinghouse range drives are the result of co-ordinated engineering and application knowledge. Each drive functions as a unit, to give you accurate control of speed and tension. They have been designed for systems that operate at speeds up to 375 YPM.

Westinghouse range drives are sturdy in construction and trouble-free in use. They can be serviced readily by your present staff.

There is a co-ordinated Westinghouse range drive for every continuous process in the Textile Industry—for open width or rope systems, for those requiring heavy or light tension. Tried-and-proven installations include:

Bleaching ranges • Dyeing ranges • Boil-off drives • Cloth printing ranges • Mercerizing ranges • Tenter ranges • Washing, soaping and drying ranges.

Our Textile Industry Specialists will be glad to help you study your processes and assist in the application of the right range drive for simple, dependable operation. Call your nearest Westinghouse office, or write to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-94812

Westinghouse

EQUIPMENT FOR THE TEXTILE INDUSTRY

Learn these Definitions

rayon

A textile fiber made of *regenerated cellulose.* (Example: viscose.)

estron

A textile fiber made of an *ester of cellulose.* (Example: cellulose acetate.)

● These separate and distinct names for the two major types of man-made fibers are recommended by the Committee on Textiles of the American Society for Testing Materials, the membership of which includes many leading manufacturers, distributors, and users of textile products.

Tennessee Eastman will follow the ASTM recommendation and identify its cellulose acetate fibers as *estron*, not rayon.

Tennessee
Eastman
Corporation

SUBSIDIARY OF EASTMAN KODAK COMPANY

KINGSPORT, TENNESSEE

COLORS SELL TEXTILES... provided they are tasteful, harmonious and of the proper quality for the purpose.

It pays to use Franklin Process Colors, which are consistently tops in quality, and to employ a recognized expert to select and combine them.

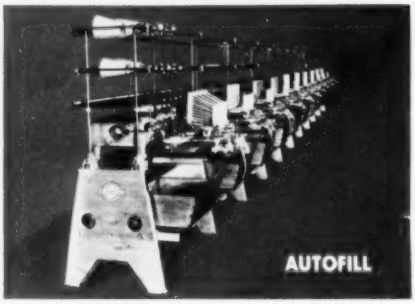
Announcing...

FOSTER-MUSCHAMP *HIGH SPEED*

FILLING WINDERS

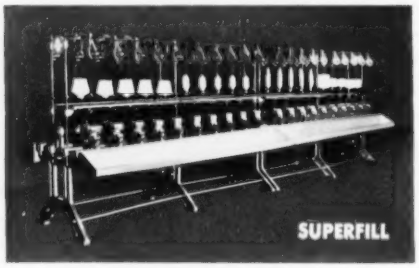
Made to American Standards

A FLEXIBLE, automatic winder for cotton, wool, synthetics and other fibers, it will wind any type filling bobbin, tube or quill from 3" to 9" at speeds in excess of 6,000 r.p.m. and in either direction. Supplied in gangs of 20-40 spindles, each 4-spindle unit has an individual automatic control, bunch builder, diameter control mechanism, traverse cam, layer-locking device and bobbin-length sizing mechanism. On rayons, up to 160 spindles can be tended by one operator.



A SEMI-AUTOMATIC, individual-spindle, high speed filling winder built in units of 20 spindles. Supplied with or without spindles and bunch builders. Equipped with new type three-speed V-belt drive which gives three ranges of speeds within 2,000-6,000 r.p.m. slow start. Individual spindle boxes used to facilitate single spindle repair. New 6-point cam makes possible lower cam speeds and provides positive layer-locking to reduce sloughing while weaving. Five standard traverses from $1\frac{5}{16}$" to 2". Wind ratio adjustable to $5\frac{1}{2}$, 7, 11, or 22. Feeler wheel and traverse bar system control filling bobbin diameter. Filling length can be varied from 6"-$9\frac{1}{2}$". Creels available to wind over-end from cones, cheeses or bobbins, or by unwinding skeins.

A HIGH SPEED single-spindle filling winder for producing coreless filling yarn. Winds cotton, linen, spun rayon, blends, jute and wool in both fine and coarse counts at speeds over 500 ft. per min. Superfill packages are used in non-automatic looms and in automatic shuttle-changing looms and contain 2-3 times as much yarn as is normal on direct-spun filling bobbins. Winds on a bare spindle or a cop bottom base for regular bobbin-type shuttle. Built in units of 20, 40 and 60 spindles with each spindle a complete unit. Various types of supply equipment permit a variety of supply packages. Package diameter adjustable up to $1\frac{15}{16}$" and length up to 10".

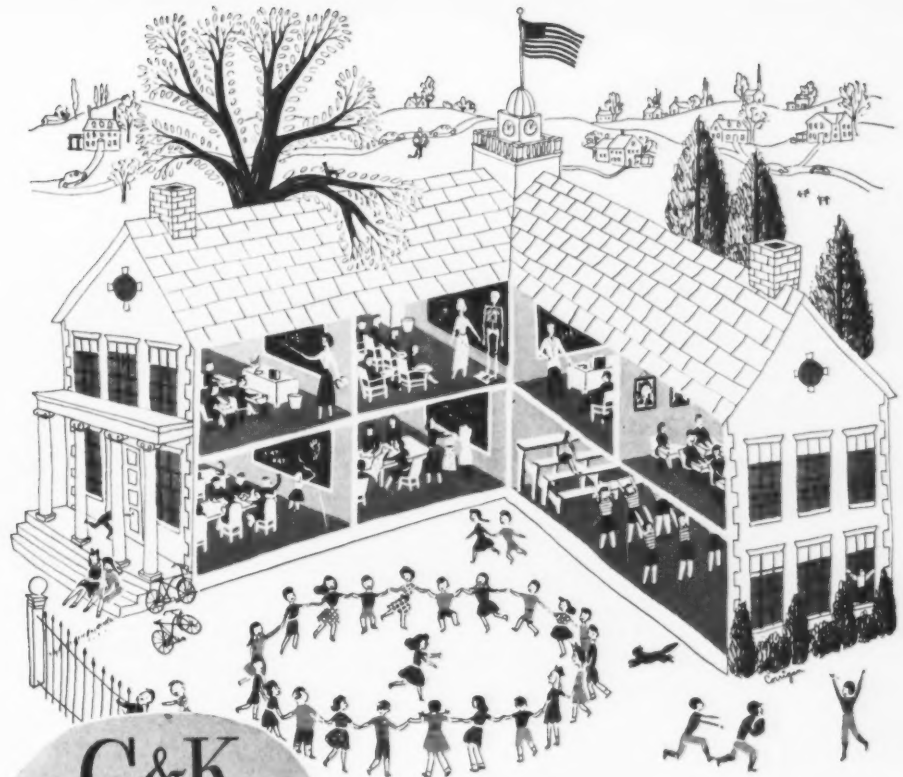


A Filling Winder for Every Job

FOSTER MACHINE COMPANY, Westfield, Mass.

A Winder for Every Textile Job

SOUTHERN OFFICE • JOHNSON BLDG. • CHARLOTTE, N. C.



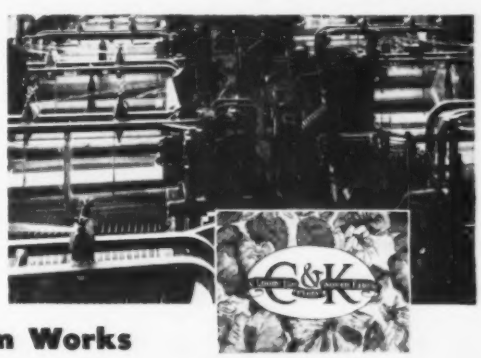
C&K C-LOOMS give the kids a big send-off ... back to school!

How close to every thrifty mother's heart are the *abusable, refreshable* products of C&K C-Looms for junior and his sis . . . everything from handkerchiefs and scarves and ties, to dress goods and shirtings and suitings, to towels and curtains and blankets!

Yes, C&K C-Looms weave cotton, spun rayon and blends into *all* these crisp, colorful fabrics, and many more besides. *For there's no end to C-Loom versatility.* Like most of the families who buy these hard-working fabrics, the C-Loom family is also big and husky . . . providing a loom to weave anything from the lightest ginghams to the heaviest upholsteries.

You can get C-Looms equipped with dobbies, head motions or cams. And, if you like, you can readily add a C&K Jacquard and go on into even brighter and more intricate fields of color and design. And what's more, *regardless of fibre content*, you get the exclusive C&K feature of 3-way convertibility to a 4x2 box automatic bobbin-changing loom for filling mixing (with tricolor feature) from either a 4 x 1 automatic bobbin-changing loom, or a 4x4 box non-automatic for pick-and-pick operation. Not to mention the choice of 4 types of Harness Motion, 4 types of Let-Off, 4 types of Take-Up, 3 types of Feeler Mechanism . . . and 8 choices of Bobbin Sizes from $7\frac{3}{8}$" to $10\frac{1}{8}$" with wound diameter up to $15\frac{5}{8}$"

Only C&K C-Looms can weave such a fantastic range of high-styled fancy fabrics. And this unmatched versatility is what *you* need to keep *your* mill competitive in the shifting quicksands of today's unpredictable market-trends. Come and see for yourself, *any time.*



This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Woven Fabrics

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS

PHILADELPHIA, PA. · CHARLOTTE, N. C. · ALLENTOWN, PA. · CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

Plastisols for fabric coating

costs reduced— operations simplified!

Find out about Geon paste resin 121

PLASTISOLS made with Geon Paste Resin 121 simplify operations—reduce costs—and make extra savings for you.

For example, with Geon resin 121, no solvent or diluent is needed. Mixing time is cut down because of fine particle size and close control. Workable pastes are made within 1 to 2 hours in standard mixers. Upholstery-weight films can be produced with only two passes of the coating machine!

Because there's no solvent or diluent there's less shrinkage . . . the fused coating is especially smooth and attractive, embosses easier and more accurately . . . the finished product is essentially strain-free.

What's more, elimination of toxic or inflammable solvent insures safer operation—reduces fire hazard—and justifies a lower insurance rate.

For complete information and technical advice on highly versatile Geon resin 121, please write Dept. L-5, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

Just a few of the uses for Geon resin 121 plastisols

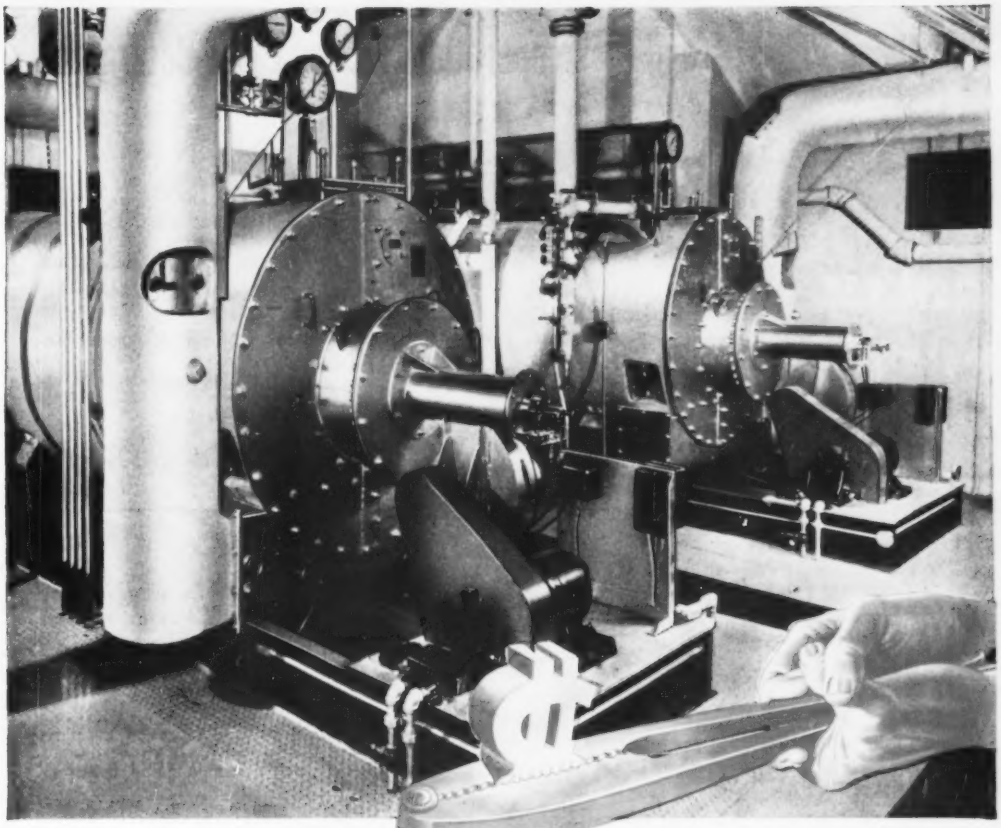
COATING—textiles, paper, fiber-glass.

DIP-COATING—gloves, dish racks, plating racks and other articles.

MOLDING—toys and dolls, artificial fish lures, prosthetic devices, mechanical parts.

B. F. Goodrich Chemical Company A DIVISION OF THE B. F. GOODRICH COMPANY

GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers



Put the *Squeeze on*

Steam Costs

NEVER forget boilers burn dollars — dollars that represent steam costs and a goodly share of your operating costs. Conditions today demand that you put the squeeze on steam costs along with your other costs. Begin with your boiler — investigate to see how much it is giving you for your fuel and operating dollars — see if it measures up in earning power as well as horsepower.

For any boiler installation (15 to 500 HP.) — new or replacement — Cleaver-Brooks offers these immediate and long range cost-saving advantages:

A Custom-Planned Boiler Engineered for Your Needs: Your steam needs and steam-using equipment are studied — your present total steam load plus your estimate of future expansion are considered — with this information the size of Cleaver-Brooks Boiler best suited to your specific needs is determined.

Factory Starting Service: Your boiler is placed in operation by Cleaver-Brooks factory service-engineers. Your operators are trained in operation, care and maintenance.

Flexible Operation Burning Gas or Oil With Equal Efficiency: You can use oil, gas, or combination oil and gas, whichever is of lower cost. Through their high heat transfer, Cleaver-Brooks boilers operate at a guaranteed efficiency of 80% from full load down to 30% of rating.

In addition, Cleaver-Brooks boilers give you clean, smokeless operation — eliminate fuel and ash handling — require no high or costly stacks — no special foundations — fit under low headroom — provide quick steaming, flexible operation to meet fluctuating loads — fully meet all codes.

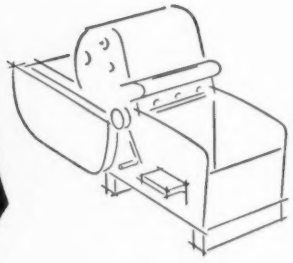
Available in sizes 15 to 500 HP., 15 to 200 P.S.I. — write for Cleaver-Brooks steam boiler bulletin.

CLEAVER-BROOKS COMPANY
370 E. Keefe Ave., Milwaukee 12, Wis.

WRITE on your business letterhead for Steam Cost Calculator— a ready reference slide rule showing comparative steam costs when using oil, gas, or coal as fuel. Mailed on request — no obligation.

Cleaver-Brooks
STEAM BOILERS

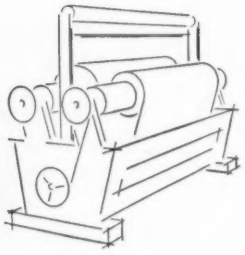
For these fibers... and these operations... use these detergents



SCOURING

Texscour Flakes, a low titer, pure red oil soap with easy solubility and rinsability.

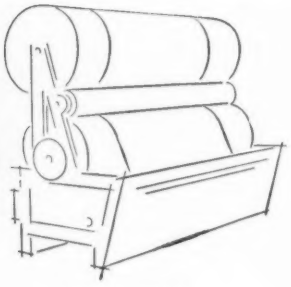
Triumph Synthetic, a low sudsing non-ionic, ready built powder with exceptional detergency.



DYEING

Regal Synthetic, a neutral alkyl aryl sulfonate with excellent wetting and detergent properties.

Energetic Synthetic, an excellent neutral, non-ionic liquid detergent with dye-leveling action.



FINISHING

Flint Chips, a neutral high titer pure soap, free from rancidity, with good lubricant qualities.

Certified Flakes, a vegetable fatty acid base soap with rapid penetrating and emulsifying properties.

Write today for Armour's handy reference chart to help you select the right soap or synthetic for each textile processing operation.

ARMOUR *Industrial Soap Division*

Armour and Company • 1355 West 31st Street • Chicago 9, Illinois

For more information, write direct or use Reader Service post card.

HYSTER KARRY KRANE®

THE **REACH** OF A GIRAFFE

THE **STRENGTH** OF AN ELEPHANT

THE **ENDURANCE** OF A CAMEL

- ✓ **Lowest priced 10,000-lb. capacity mobile crane.**
- ✓ **Pneumatic tires—works anywhere indoors or outdoors.**
- ✓ **Adjustable boom—5 positions.**
- ✓ **Trunnion steering for maximum maneuverability.**
- ✓ **Speeds up to 10 m.p.h. in either direction.**
- ✓ **Great for loading and unloading gondolas, flat cars, motor vans.**

TRY IT... YOU'LL BUY IT...

Once a Karry Krane is in your plant or storage yard—EARNING for you—CUTTING COSTS for you—LIFTING AND MOVING all kinds of materials—you will wonder how the work was ever done BEFORE.

THOUSANDS OF KARRY KRANES ARE WORKING FOR HUNDREDS OF INDUSTRIES.

In some businesses it's a *production* mobile crane with regular materials handling jobs to do on schedule every day.

In other businesses, it's a utility, all-purpose, standby machine—able to go anywhere—ready to do any emergency or unusual moving job. Like good insurance—it's ready when you need it.

The Karry Krane is the LOWEST PRICED, 10,000-pound capacity mobile crane. It can do anything (within its capacity) that ANY OVERHEAD OR STATIONARY CRANE OR HOIST CAN DO and it can go anywhere to do it.

TRY IT and YOU'LL BUY IT. A demonstration in your plant—on your home grounds—will prove it to you. Your Hyster distributor is anxious to help you.

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THREE FACTORIES

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 For more information, write direct or use Reader Service post card.

TREES
OF MERCY FROM OUT OF THE SKY

Anywhere in the world where persons are cut off from normal sources of supply . . . food, fuel, medicine, and other necessities can be brought to them by air transport—even though landing facilities do not exist. The answer, of course, is the cargo parachute.

These life-preserving 'chutes usually are made, wholly or in part, from high-strength viscose rayon yarn, much the same kind of yarn that improves the wearing qualities of automobile and truck tires. And what is the yarn made from? Trees!

In fact, more than eighty per cent of all viscose rayon and acetate yarns produced in this country are made from highly purified cellulose derived by chemical processes from wood.

Rayonier supplies a large part of the highly purified wood cellulose used by domestic textile manufacturers for making viscose rayon and acetate yarns and staple fiber for wearing apparel, tire cord, draperies, rugs, and many other textile products. We also supply large quantities of purified wood cellulose for the manufacture of cellophane and other transparent packaging materials.

RAYONIER
INCORPORATED

EXECUTIVE OFFICES: 122 East 42nd Street, New York 17, New York • MILLS: Hoquiam, Port Angeles, Shelton, Washington; Fernandina, Florida

PRODUCER OF HIGHLY PURIFIED WOOD CELLULOSE for TEXTILES • TIRE CORD • CELLOPHANE • PLASTICS

THE PLANT THAT MAKES—

Only One Specific Type of Product—

WORLD FAMOUS "QUALITY" SOUTHERN SHUTTLES

Perfection in design and construction must always be reached before a shuttle is trade-marked **"Southern"**. That's why—in two short decades—they have become recognized as the world's leading shuttle.

Modern in every concept, they are produced in an air-conditioned plant specifically built for the exclusive straight-line production of just one product—**the world's finest shuttle "Southern"**.

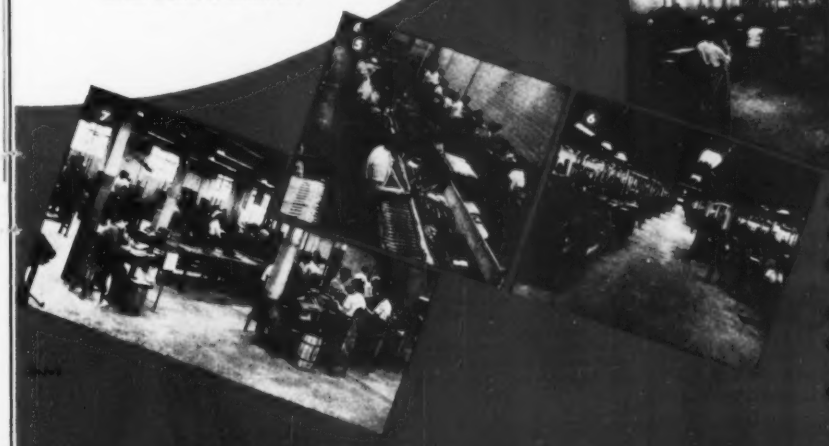
Each and every step of Southern Shuttle Manufacture, from selected dogwood to final inspection is scientifically controlled—with master craftsmen directing shuttle experts on each operation.

Pictured here is the home of Southern Shuttles, where dust is unknown, humidity constantly controlled. Interior views, display just a few of the many precision operations necessary in making world-famous Southern Shuttles. They illustrate the immensity of this one operation devoted to Southern Shuttle making, where dogwood is Tempered and characterized by grain structure and density.

After precision machining operations and tests, perfectly uniform **Southern Shuttles** step out to **"Weave the World's Needs"**.

Featuring Tempered Dogwood (plain and fibre covered) and a complete line of shuttle eyes for every loom requirement. Satisfactory performance is guaranteed.

Consult with us on the specialized better shuttle of tomorrow.



1 Billet Section high speed automatic boring machines form tapered shuttle blanks.

2 Machine operating in battery fashion smooths ends and inlands bottom.

3 Skilled craftsmen using secret formula and equipment in Staining and Coloring Dept.

4 Part of Automatic Shuttle Dept.—where precision machining is guided by expert hands.

5 A section of final assembly—where perfect Shuttle blanks and precision machined fittings become complete, ready-to-use shuttles.

6 Inspector Supervisor (One of part of the 1,000,000 sq. ft. of plant space).

7 One corner of the Eye Department—where patented scientific Southern Shuttle Eyes are made.

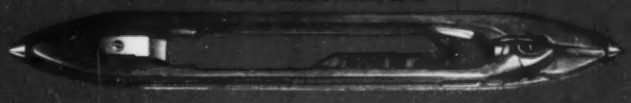
8 Tested continuously throughout production—every shuttle must pass a final test and inspection.

SOUTHERN SHUTTLES

A DIVISION OF

STEEL HEDDLE MFG. CO.

PARIS, GREENVILLE, S. C.



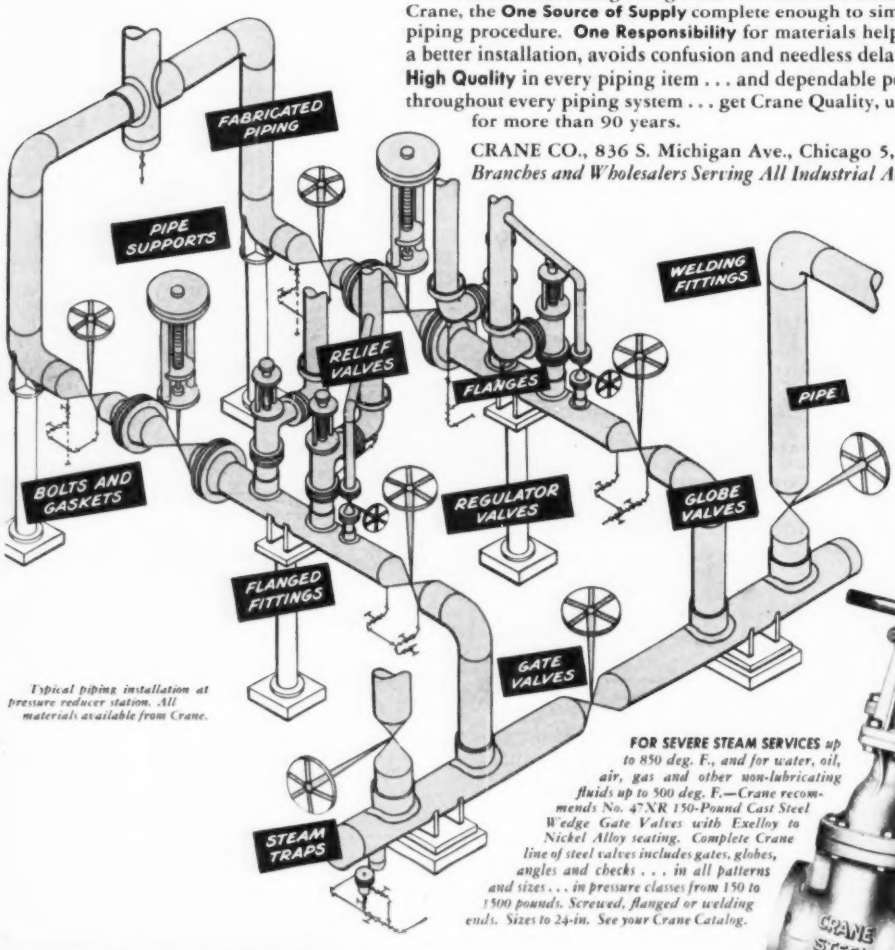
For every pressure and temperature condition ...CRANE piping meets the need

ONE SOURCE OF SUPPLY
RESPONSIBILITY
STANDARD OF QUALITY

Take This Pressure Reducer Station, for example. Here Crane piping equipment meets the need just as it does for any power, process or general service installation. For the Crane line of valves, fittings, pipe and accessories is the world's most complete. You can select everything from one catalog . . . get everything on one order to your local, well-stocked Crane Branch or Wholesaler.

Power men have long recognized the value of standardizing on Crane, the **One Source of Supply** complete enough to simplify every piping procedure. **One Responsibility** for materials helps to assure a better installation, avoids confusion and needless delays. And for **High Quality** in every piping item . . . and dependable performance throughout every piping system . . . get Crane Quality, unsurpassed for more than 90 years.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas



Typical piping installation at pressure reducer station. All materials available from Crane.

FOR SEVERE STEAM SERVICES *up to 850 deg. F., and for water, oil, air, gas and other non-lubricating fluids up to 500 deg. F.—Crane recommends No. 47XR 150-Pound Cast Steel Wedge Gate Valves with Exelloy to Nickel Alloy seating. Complete Crane line of steel valves includes gates, globes, angles and checks . . . in all patterns and sizes . . . in pressure classes from 150 to 1500 pounds. Screwed, flanged or welding ends. Sizes to 24-in. See your Crane Catalog.*

EVERYTHING FROM . . .

VALVES • FITTINGS
PIPE • PLUMBING
AND HEATING

CRANE

FOR EVERY PIPING SYSTEM

For more information, write direct or use Reader Service post card.

DESIGNED TO CATCH A WOMAN'S EYE!

Across the sales counter, it's women who buy textiles. When you package for women, the important things to remember are color, style, convenience, design. Because the package that attracts women is the package that sells.

Let our Textile Packaging Laboratory help you add selling power to your packages. We study the psychology of women at the point of purchase—survey your packaging and distribution methods—and recommend the specific package most suited to your own product, most economical for your needs, most attractive to the consumer. Container Corporation's long experience and leadership in package development are at your service.

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TEXTILE PACKAGING LABORATORY, PHILADELPHIA

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Executive and General Offices

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ESTABLISHED 1840

Methocel:

the Excellent Emulsion Stabilizer

In addition to emulsion stabilizing properties, METHOCEL is of value to the *Textile Industry* as a print paste thickener. It combines uniform thickening power with high printing efficiency. METHOCEL's use results in brighter, smoother, and sharper prints.

Because of its inherent toughness and flexibility, METHOCEL has proved valuable in warp sizing formulas. Its cold water solubility makes for easy removal. It resists spoilage and, being a synthetic product, assures uniformity of results. Get acquainted with the new METHOCEL —now available in powdered form to facilitate its use. Send for free, experimental sample of the *new* METHOCEL, *powdered*.

THE DOW CHEMICAL COMPANY · MIDLAND, MICHIGAN

THE new *methocel*

DID YOU GET YOUR SAMPLE?

The Dow Chemical Company
Dept Me-1918
Midland, Michigan
Please send free sample of METHOCEL for use in_____
Check viscosity desired: 15, 25, 100, 400, 1500, 4000 cps.
Name and Title_____
Firm_____
Address_____

DOW

CHEMICALS INDISPENSABLE
TO INDUSTRY AND AGRICULTURE

Like Throwing Every 3rd Shovel of COAL in the RIVER

"YOU see, in our plant we use lots of hot water —all textile plants do; and when that water does its many jobs we just run it into the sewer. We've been mighty busy meeting demand and that's my alibi. Now I find time to look for ways to lower production costs, for, one frosty morn last winter I saw steam rising from our river. I found that we pour 200° water into the river. That chap representing Sims of Erie, Pa. said it was like heaving 1 shovel of coal out of 3 into the river. He guaranteed that I'd save the cost of his system for recovering BTU's in less than a year, at the rate we were going. But I thought he was just one of those enthusiastic salesmen. He said that 200° waste water was valuable fuel for his heat recovery system, and with a little boost from the main line he'd lighten the load on our old boiler and give me more really hot water than I ever had before.

Well, it's 9 months now and I have more than paid for the Sims of Erie, Pa. Heat Recovery System. Now who will believe it? I never would have if I didn't see that steam rising from our river. I understand that you, too, can do a job of saving if your sewer water is 120° or higher—mine was 200°. That's why I saved so much so soon, but it wasn't any too soon at that, for I could have done it years ago."

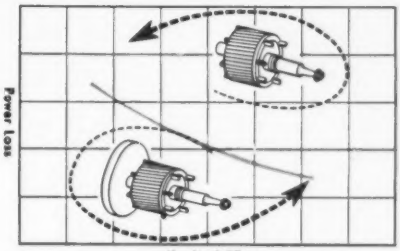
The SIMS CO.

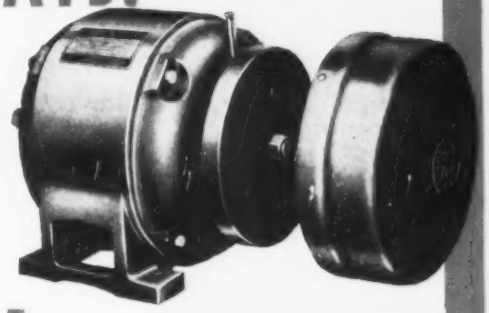
Box 1096W, ERIE, PA.

Manufacturers of Exhaust Gas Boilers • Heat Exchangers • Storage Water Heaters • Feed Water Heaters • Steam Separators • Commercial Type Instantaneous Water Heaters • Oil Heaters • Quenching Oil Coolers • Caustic Soda (Sodium Hydroxide NaOH) Recovery Equipment and Unit Type Coal Pulverizers.

the new G-E flywheel loom motor

cuts loom operating costs 4 WAYS!



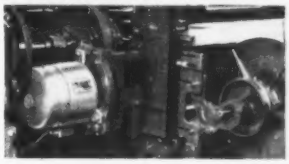


1. IT CUTS YOUR POWER COSTS!

Where a study indicates the need for a motor with additional flywheel effect, a *standard* General Electric loom motor with a flywheel integrally mounted will give you worthwhile power savings. As the chart shows, it reduces the peaks and valleys of the motor input, thereby cutting power losses.

2. IT CUTS THE SIZE OF MOTOR YOU NEED!

Often, a flywheel permits the use of a motor one size smaller than would be possible with a conventional loom motor. On the other hand, increased loom speed can be obtained without using a motor of greater horsepower.



3. IT PERMITS INCREASED PRODUCTION

With a flywheel on its shaft, a 1200 rpm motor may deliver performance equivalent to that of an 1800 rpm motor. This allows changing loom speeds in smaller increments and the use of stronger pinions—both well-recognized benefits.

4. . . . *and* IT ACTUALLY IMPROVES LOOM PERFORMANCE.

In mills where General Electric flywheel loom motors have been installed, reports indicate that a flywheel loom motor improves loom performance—loom fixers like the better "feel."

Ask your G-E sales engineer and your loom manufacturer about this new loom motor or, write for Bulletin GEA-5011B. Apparatus Dept., General Electric Co., Schenectady 5, N. Y.

TOTALLY ENCLOSED LOOM MOTORS

GENERAL ELECTRIC

FOR YOUR INFOR M ATION

TYPICAL CATALYST AC DATA

BATH STABILITY AT 25° C.

Bath Solution	With 6% DAP (35% sol.)	With Catalyst AC
20% Resloom HP	1 hour*	11 hours
33.3% Resloom M-75	15 hours	Stable after 24 hours
36.4% Urea-formaldehyde	8 hours	Stable after 24 hours

*Note: DAP is not *recommended* for Resloom HP.

CURE TIME

Conditions: Hot plate at 300° F. Cure time = time to set resin to infusible solid. Cure Time (in seconds).

Resin & Bath Concentration	With 6% DAP (35% sol.)	With Catalyst AC
20% Resloom HP	3 sec.	2 sec.
33.3% Resloom M-75	12 sec.	11 sec.
36.4% Urea-formaldehyde	2 sec.	2 sec.

The foregoing figures were obtained by testing the resin itself by curing on a hot plate. Under these conditions the time of cure is much less than could be expected when the resin is in the fabric, since time must elapse to heat up the fabric as well as the resin it contains.

RESIN RETENTION

Duplicate sets of fabric samples (80² White Cotton Sheeting) were treated with Resloom HP, Resloom M-75 and urea resin. One set was cured with DAP, as the catalyst; the other was cured with Catalyst AC. Both sets were given three AATCC standard cotton launderings. The percent of resin retention was determined before and after washing from the percent nitrogen by Kjeldahl analyses.

Resin	Catalyst	After Curing % Resin	% Resin After 3 AATCC Washings
Resloom HP	6% DAP (35% sol.)	13%	9%
	6% Catalyst AC	13%	12%
Resloom M-75	6% DAP (35% sol.)	9%	7%
	6% Catalyst AC	9%	8%
Urea resin	6% DAP (35% sol.)	10%	9%
	6% Catalyst AC	10%	9%

Results to date indicate that resins cured with Catalyst AC are retained as well or somewhat better than with earlier catalysts. Consequently, fabrics can be expected to have improved washability.

Cotton and Rayon Mills get seven advantages with Catalyst AC

Catalyst AC was developed to eliminate two main difficulties mills met with diammonium phosphate: short bath life, and incompatability with useful softeners and penetrants.

Catalyst AC overcomes these difficulties and gives mill men a number of added advantages. With Catalyst AC you get:

1. Reduced odor problem.
2. More than twice the useful bath life gained with diammonium phosphate.
3. Resin retention at least equal to, and in most cases substantially better than diammonium phosphate.
4. Curing rates equal to, or substantially faster than those with diammonium phosphate.
5. A softer, more desirable hand on cotton and rayon fabrics where crush resistance, shrinkage control, and stability is required.
6. Elimination of refrigerating baths.
7. Compatability with most cationic, anionic, and non-ionic softeners and penetrants.

Catalyst AC now available in steel drums

Monsanto has switched Catalyst AC containers from glass carboys to non-returnable steel drums. The move eliminates returns and deposits, makes Catalyst AC easier and more economical to handle!

- MANY OF THE LARGEST FINISHERS
- WITH THE LARGEST RESEARCH STAFFS
- ARE USING MORE AND MORE CATALYST AC

Best compliment you can pay a product is to buy it, use it, and then *re-order* it. That's the kind of compliment we've been getting on Catalyst AC from some of the largest cotton and rayon finishers in the country. These are the mills with the research staffs and laboratories to make sure the product is right. These are the mills with the cost-control systems to make sure that their processes are *economical*. And these mills . . . with their highly qualified experts on textile processing chemicals ...are proving Catalyst AC by their orders and re-orders.

Catalyst for Cost Cutting: Important operating economies can be made with Catalyst AC, especially by mills on shifts. That's because Catalyst AC reacts faster when you want it fast (in the curing oven) and slower when you want it slow (in the bath). It will not cause polymerization in the bath for 24 to 48 hours. The result is that you save refrigeration costs common with diammonium phosphate; and you get a product that's easier and cheaper to handle on overnight shutdowns.

Greater Resin Retention after Washing: Your melamine or urea finish stays on the fabric longer with Catalyst AC, as shown in the resin retention table on the left-hand page. Better washfastness in a cotton or rayon finish is a *consumer* advantage which is reflected quickly in *mill* sales.

FOR UREA AND MELAMINE FINISHES

Cotton and rayon mills find Catalyst AC effective on both melamine and urea finishes. If your mill uses urea finishes for crush resistance, fabric stability or shrinkage control on cottons or rayons, you'll find that Catalyst AC can lower your processing costs...raise your efficiency, and give you a higher-quality fabric.

Send the coupon for full information.

SERVING INDUSTRY . . .
WHICH SERVES MANKIND

MONSANTO
CHEMICALS — PLASTICS

MONSANTO CHEMICAL COMPANY
Textile Chemicals Dept., Desk TWT-22
Everett Station, Boston 49, Mass.

☐ *Please send full technical information on Catalyst AC.*

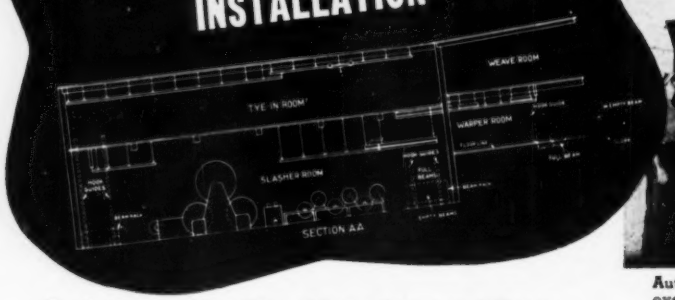
Name _____ Title _____

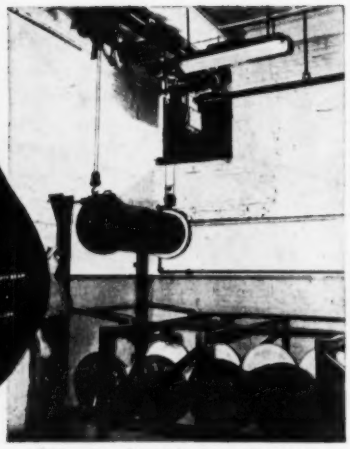
Firm _____

Address _____

City _____ Zone _____ State _____

Another AMERICAN MONORAIL AUTOMATIC BEAM HANDLING INSTALLATION

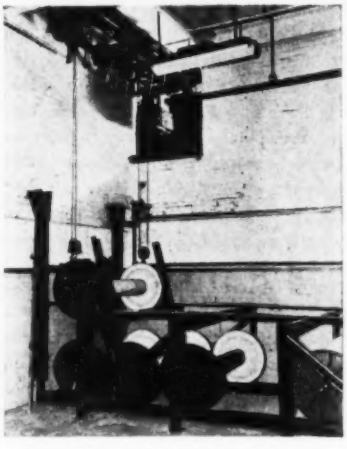




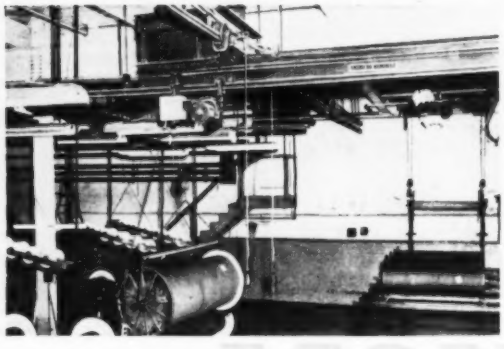
Automatic dispatched carrier stops over rack in slasher room, lowering beam which is guided into position for deposit on the upper tier of rack. Beam automatically rolls off hooks which continue down to lower tier to engage with an empty.

To eliminate hand pushing of heavy beams on dollies up and down ramps between various rooms appeared to be a very complicated and costly job. With hundreds of overhead handling installations to draw upon, American Mono-Rail engineers, by using a few simple innovations, installed this system. Now, full beams are automatically transferred from the warper room on one level, to the slasher room on a lower level, with return transfer of empty beams without attention after carrier is started. Savings effected will pay for the system in a suprisingly short time.

Why not put your handling problems in the hands of an American MonoRail engineer? Let him show you cost and time-saving advantages offered by American MonoRail Overhead Handling System. No obligation, of course.



Carrier unit automatically raises empty beam to upper limit whereupon the unit returns to the warper.



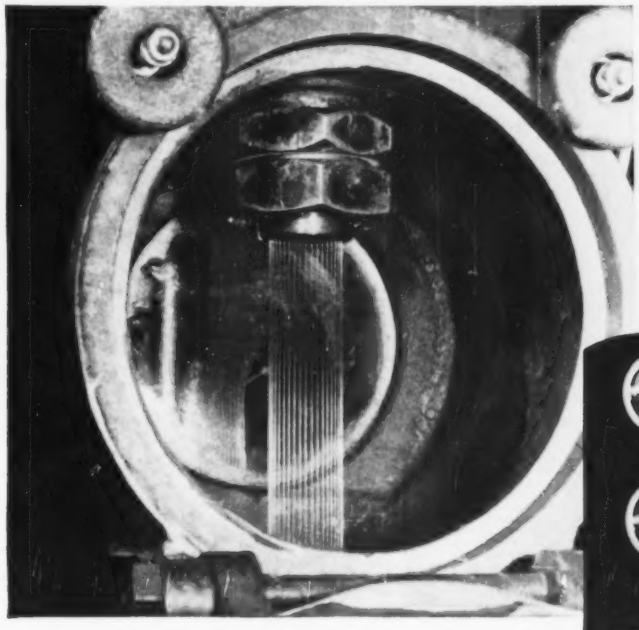
Hand pushed crane with electric hoist takes beams from rack to interlocking spur track over each slasher creel.

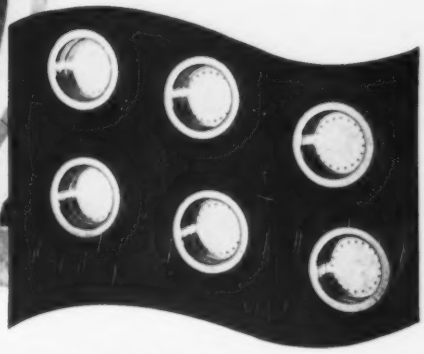
THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE CLEVELAND 7, OHIO

STAINLESS STEEL SPINNERETTES extrude a liquid synthetic which solidifies into fine, water-resistant yarn the instant it meets a stream of hot air. As loose rust and scale might plug tiny spinnerette holes, causing yarn imperfections, stainless steel's corrosion-resistance and ease of cleaning are vital. Stainless steel also protects yarn color and color stability against metallic-contamination effects. In its journey to spinnerettes, liquid "dope" travels through pipes, mixers, tanks of corrosion-resistant stainless steel.

Enduro - THRIFTY METAL OF 10,000 USES





CORROSION EXCLUDED WHERE YARN IS EXTRUDED

Republic ENDURO Stainless Steel stubbornly and effectively *resists rust and corrosion.* Textile equipment made of it is endowed with a natural immunity to dye bath chemicals and bleaches . . . resists the corrosive action of superheated steam. Result: product-contacting ENDURO surfaces stay clean, smooth and unpitted. They offer no foothold for accumulations of dirt or other contaminating substances. They discourage the build-up of corrosion products which might foul the equipment, the system or the product.

With corrosion—and corrosion products—forestalled, production moves steadily, with fewer shutdowns for periodic cleanouts or replacements. Equipment life is lengthened substantially. Maintenance costs plunge to record low levels. Thus, you pay no financial penalty for *all* of ENDURO's many advantages—in fact, you save.

Booklet 444, written especially for the textile industry, lists pertinent properties of Republic ENDURO Stainless Steel, and gives specific data. Write today for your free copy.

REPUBLIC STEEL CORPORATION

Alloy Steel Division • Massillon, Ohio

GENERAL OFFICES • CLEVELAND 1, OHIO

Export Department: Chrysler Building, New York 17, N. Y.

Enduro **STAINLESS STEEL**

REG. U. S. PAT. OFF.

REPUBLIC STEEL

✓ **Check ALL 10 Advantages:** • RUST AND CORROSION-RESISTANCE • HEAT-RESISTANCE • HIGH STRENGTH • NO METALLIC CONTAMINATION • SANITARY SURFACES • EASY TO CLEAN • EYE APPEAL • EASY TO FABRICATE • LONG LIFE • LOW END COST.

 For more information, write direct or use Reader Service post card.

No top-heavy v-belt inventory with VEELOS the link v-belt

4 reels of VEELOS replace 316 sizes of endless v-belts

● Why jam your stockroom with costly inventories of hundreds of sizes of endless v-belts when 4 reels of VEELOS will handle every v-belt job in the O, A, B and C widths? If you use only two widths of v-belts, two reels of VEELOS will be all you need.

It's a matter of record that *dollar for dollar* VEELOS gives the greatest value. Machine maintenance is kept low because uniform tension is easy to maintain. You install VEELOS *without* dismantling outboard bearings.

PUT THESE 7 VEELOS EXTRAS TO WORK FOR YOU...

- Minimum Inventory
- Easy Installation
- Any Length Immediately Available
- Practically No Downtime
- Smooth, Vibrationless Power Delivery
- Long Lasting
- Matched Belts That Stay Matched

VEELOS
THE LINK
V-BELT

For All the Facts and complete engineering information, measuring and installation directions—write for your copy of the Veelos Data Book.

MANHEIM MANUFACTURING & BELTING COMPANY
MANHEIM, PA.

ADJUSTABLE TO ANY LENGTH • ADAPTABLE TO ANY DRIVE

Made in all standard sizes, fits all standard grooves. Packaged on reels in 100-foot lengths. Sales engineers in principal cities; over 350 distributors throughout the country. Veelos is known as VEELINK outside the United States.

For more information, write direct or use Reader Service post card.

Never seen —always visible

Uniformity at the point where the stitch is laid is an unseen quality in knitting needles that is always visible in the knitting itself. For the size of each needle at this point determines the size of the stitch it lays—and only when all needles are uniform here are all stitches uniform in the knitted fabric.

Torrington maintains uniformity at this point by means of special precision equipment. This is one of the reasons why you can rely on the needles in the Red and Green box to produce good knitting. Insist on Torrington Needles.

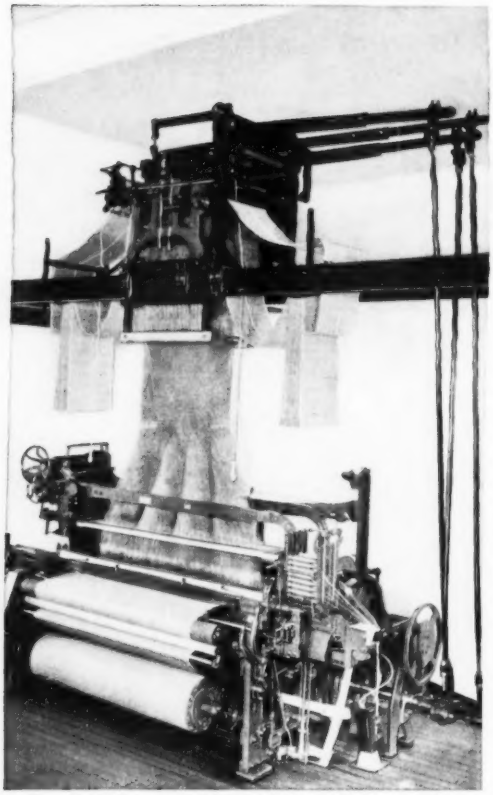
THE TORRINGTON COMPANY, Torrington, Conn., U. S. A.
Established 1866

Branches: New York • Philadelphia • Chicago • Greensboro, N. C. Boston • St. Louis • Toronto, Canada • *Pacific Coast Representative:* E. G. Pardee, 1762 West Vernon Ave., Los Angeles 37, California. Broadgate House, 7-10 Eldon Street, London E. C. 2, England.

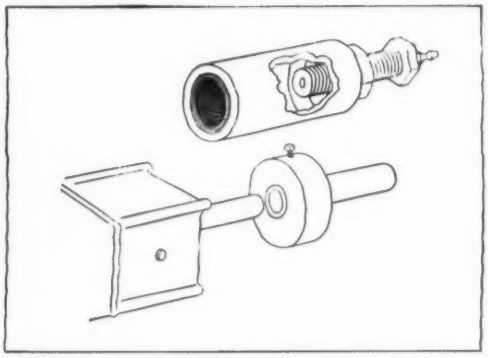
TORRINGTON

SPRING BEARD NEEDLES • SINKERS • DIVIDERS • SPLIT DIVIDERS

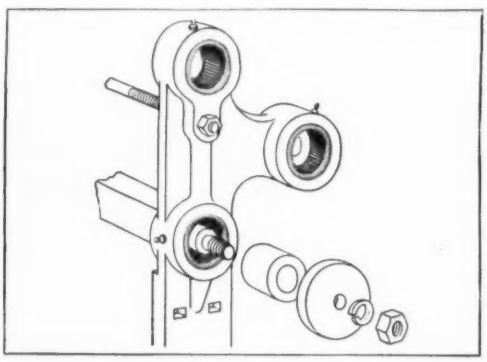
Torrington Needle Bearings
Insure Accurate Pattern Control
in Crompton & Knowles Jacquards



Crompton & Knowles Jacquards make possible high speed weaving of intricately patterned fabrics. They manipulate as many as 14,000 warp ends at a rate as high as 150 times a minute. Pattern is controlled by punched cards passing over a four-sided wood cylinder, designed with a series of holes 0.192" apart.



To produce perfect patterns in the fabric, accurate cylinder alignment is insured by the use of Torrington Needle Bearings as sketched above. Needle Bearings provide smooth, anti-friction operation, eliminating wear at the cylinder gudgeons.



Torrington Needle Bearings are also used in the lifting and cylinder levers. Loads are heavy. Needle Bearings provide a large area of contact surface for tremendous radial capacity. Lubrication and maintenance are greatly reduced, since the turned-in lips of the shell conserve lubricant and keep out lint and fly.

Your textile equipment, too, can benefit from the efficient operation, effective lubrication, and long service life of Torrington Needle Bearings. Our engineers will gladly help you adapt these compact anti-friction units to your designs. Write us today. THE TORRINGTON COMPANY, Torrington, Conn., or South Bend 21, Ind. District offices and distributors in principal cities of the United States and Canada.

TORRINGTON *NEEDLE* **BEARINGS**

Needle • Spherical Roller • Tapered Roller

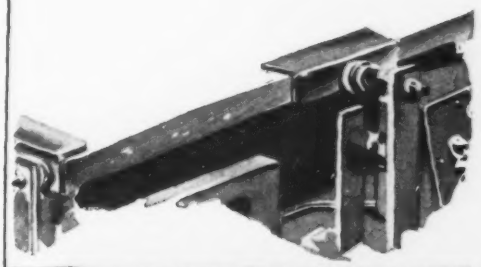
Straight Roller • Ball • Needle Rollers

Good Steps to Take...

to make a plant a better plant...

The On-The-Floor Test

From the standpoint of safety, what makes the best floor surface for a plant? There have been a lot of guesses but now they *know*. A pair of "dawgs" pounding the "pavements" of an electronic stepmeter is used to measure the safety efficiency of any walkway surface. It's a sure test to find the best.



The On-The-Wall Test

From the standpoint of results and economy, what is the best paint for a plant? Again, there have been a lot of guesses . . . but there's one *sure* way to tell. Test paints *on the wall.*

Yes, compare a gallon of any good paint with a gallon of Barreled Sunlight. Thin each according to directions on the can. Paint them on a wall, side by side, and see the results. Measure the difference in yardage. Check how solidly each covers . . . and the appearance of both after drying. And *by all means,* keep close tabs on the amount of painting time required for each paint, because time means labor which represents 80% of painting costs.

It's a simple test to make. But brother, how it proves that Barreled Sunlight gives you a better looking, longer lasting paint job *for less money* than any other paint on the market.

Talk it over with the Barreled Sunlight representative. Write and he'll call.

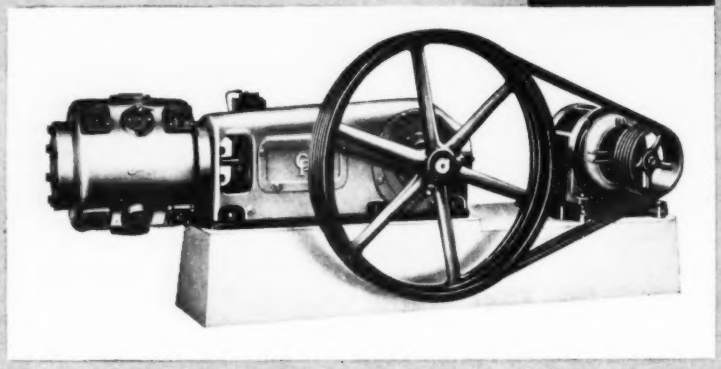
U. S. GUTTA PERCHA PAINT COMPANY
20-J Dudley Street, Providence, Rhode Island

Barreled Sunlight *Paints*

In whitest white or clean, clear, pleasing colors, there's a Barreled Sunlight Paint for every job

It always costs more not to paint!

years of satisfactory service prove dependability of Type T



This horizontal, straight-line, double-acting, moderately rated compressor is noted for continuous, economical operation . . . low maintenance . . . long life.

Its special features include Simplate valves . . . liberally water-jacketed cylinder and heads . . . adjustable, tapered roller main bearings . . . double-counterweighted crankshaft.

CP Type T Compressors are furnished in single stage units from 89 to 1937 c.f.m., 15 to 125 H.P., with V-belt, flat belt, and direct-connected synchronous motor drive. Multi-stage designs for pressures up to 5,000 pounds, and steam-driven types are also available.

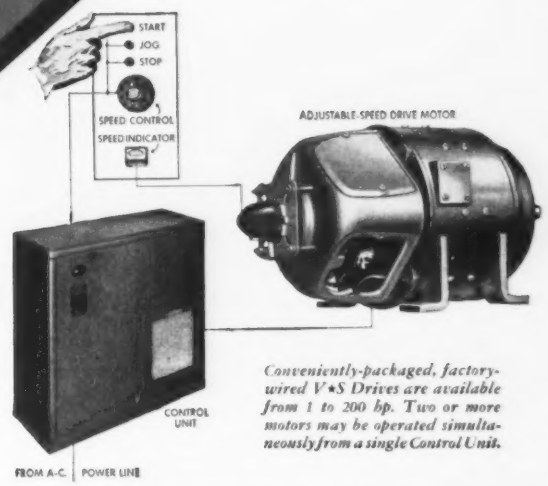
Write for Bulletin 728-7.

CHICAGO PNEUMATIC TOOL COMPANY

General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

RELIANCE V★S DRIVE



Conveniently-packaged, factory-wired V★S Drives are available from 1 to 200 hp. Two or more motors may be operated simultaneously from a single Control Unit.

RELIANCE ENGINEERING

POINTS THE WAY
TO TOP SPEED PRODUCTION!

Reliance takes special pride in a record of service to industry which covers a period of over 40 years. In the textile industry, for example, electric drives engineered by Reliance to meet all processing requirement are delivering high production at low cost in mills of all types and sizes today. These results testify to the wealth of specialized experience and practical production "know how" which Reliance engineers are ready to place at *your* disposal. Just call the nearest Reliance office or write for Bulletin 311.

Sales Representatives in Principal Cities

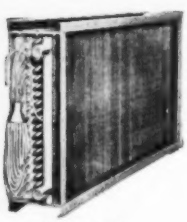
RELIANCE ELECTRIC AND ENGINEERING CO.

"Motor-Drive is More Than Power" • **1086 Ivanhoe Road, Cleveland 10, Ohio**

READY!
THE ALL NEW--
STURTEVANT
AIR HANDLING UNIT
--STABLE
PERFORMANCE,
NEW FLEXIBILITY

Refrigeration Compressors

Axial Flow Fans

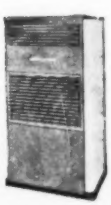


Heating and Cooling Coils

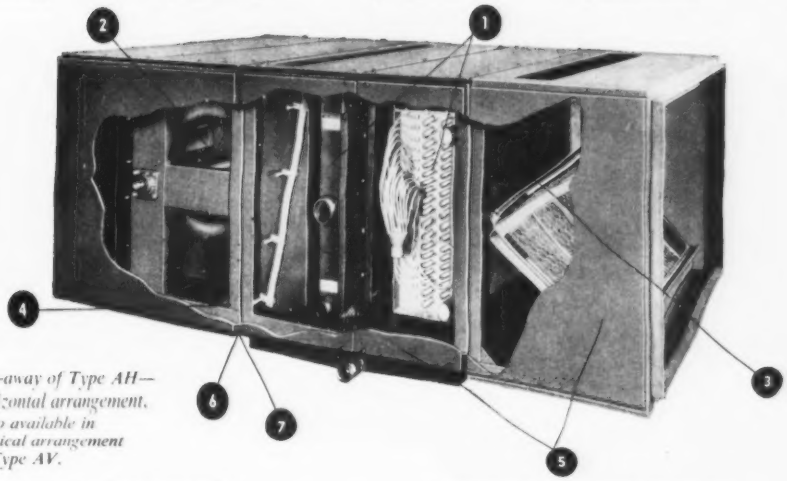
Everything that puts air to work for Every application

Refrigeration Condensers

Centrifugal Fans



Unit Air Conditioners



Cut-away of Type AH—horizontal arrangement. Also available in vertical arrangement —Type AV.

1. ALL TYPES OF COILS AVAILABLE
—for well water, chilled water or Freon, as well as hot water or steam—a complete line.

2. STABLE, QUIET FAN OPERATION
—with a revolutionary fan design. Non-overloading horsepower, steep stable pressure characteristic, certified performance.

3. MINIMUM INTERNAL RESISTANCE
—static pressure requirements kept low. Ample filter area, plate-type fins, eddy-free flow.

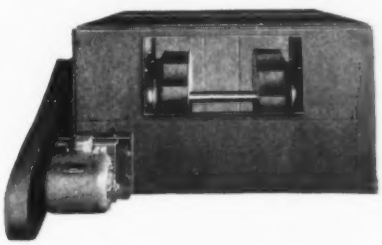
4. RUGGED, INSULATED CABINET
Sectionalized casing with welded, gussetted structural angle frames and insulated panels.

5. EXCELLENT MAINTENANCE ACCESSIBILITY
—wide, gasketed, hinged doors for easy filter removal. Fan and coil section panels removable.

6. FLEXIBLE DESIGN
—sectional construction permits wide variety of assembly arrangements and uses.

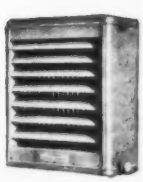
7. EASY TO ASSEMBLE AND INSTALL
—shipped in sections for ease of handling. Single outlet simplifies duct work.

8. UNDIVIDED RESPONSIBILITY
—*fans, coils, motor . . .* every *major part a product of* one *manufacturer. You can't get this vital, plus-value anywhere else!*



This announcement is important to you. For the complete story of these new units, including their selection and application, call your nearest Sturtevant office, or write Westinghouse Electric Corporation, Sturtevant Division, Hyde Park, Boston 36, Mass.

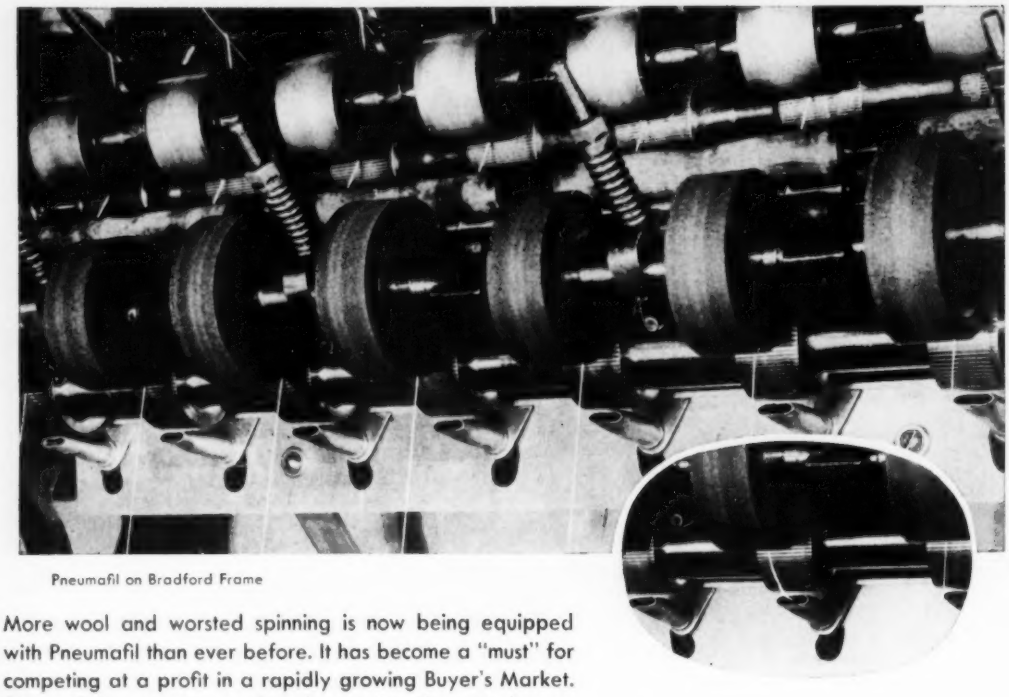
Westinghouse
Sturtevant Division



Unit Heaters

PRECIPITRON®
(Electronic Air Cleaner)

Surface Dehumidifiers



Pneumafil on Bradford Frame

More wool and worsted spinning is now being equipped with Pneumafil than ever before. It has become a "must" for competing at a profit in a rapidly growing Buyer's Market. Some of the reasons, as given by wool and worsted users, for the greatly increased demand for Pneumafil are:

"Has reduced our spinning costs 10%"

"We have been able to increase frame speeds 18%"

"Has eliminated spinning doublings which formerly were a big problem"

"Our spinners tend two more sides and have less work than before"

"Increased value of salvage waste alone pays for the installation"

"We have less ends down and cleaning is reduced appreciably"

"The quality of our yarn is better. There are less end piecings, less slubs and less doublings"

"End piecings are easier to make"

"We produce more yarn per frame"

Pneumafil is paying off through its incomparable ability to help make more and better wool and worsted yarns for less. It is the best investment spinners can make to keep ahead of tough competition and to assure continued profitable operations.

*Registered Trademark

for
American, Bradford, and French Worsted Spinning

also
Wool, Cotton, Rayon, Jute, Asbestos and Blends

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South America and Continental Europe:
Luwa, S. A., Zurich, Switzerland

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Ian M. Haldane & Co.
P.O. Box 54, London, Canada

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Tecnatex, S. A.
Monterrey 101, Mexico, D. F.

Pneumafil Corporation • Charlotte • Boston

up from the minor leagues

comes stainless sheet and strip

Stainless steel has now moved up to the major leagues. Advances in strip mill techniques have played an important part. Now, CRUCIBLE, using the best of these accepted modern techniques, plus exclusive ones of its own . . . is producing stainless by specialty steel production methods at the busy Midland Works. In the *first* mill *specifically* built for the production of stainless, top steel specialists are putting to good use $18,000,000 of new tools and buildings. When the leader in the specialty steel field applies specialty steel production methods to stainless, you can rightly expect that from CRUCIBLE you'll get the best that a half century of experience and modern tools can provide.

The new mill will produce stainless in widths of ½″ to 50″ inclusive, in all gauges, grades and finishes. This is important news to users of stainless steels, because with Trent Tube Company joining the organization, you can get stainless from Crucible in every form: sheets, strip, plates, bars, wire, forgings, castings and tubing. Crucible offers comprehensive data sheets and unsurpassed metallurgical service. Your inquiries are welcome.

CRUCIBLE STEEL COMPANY OF AMERICA
405 Lexington Ave., New York 17, N. Y.
Branches, Warehouses and Distributors in Principal Cities

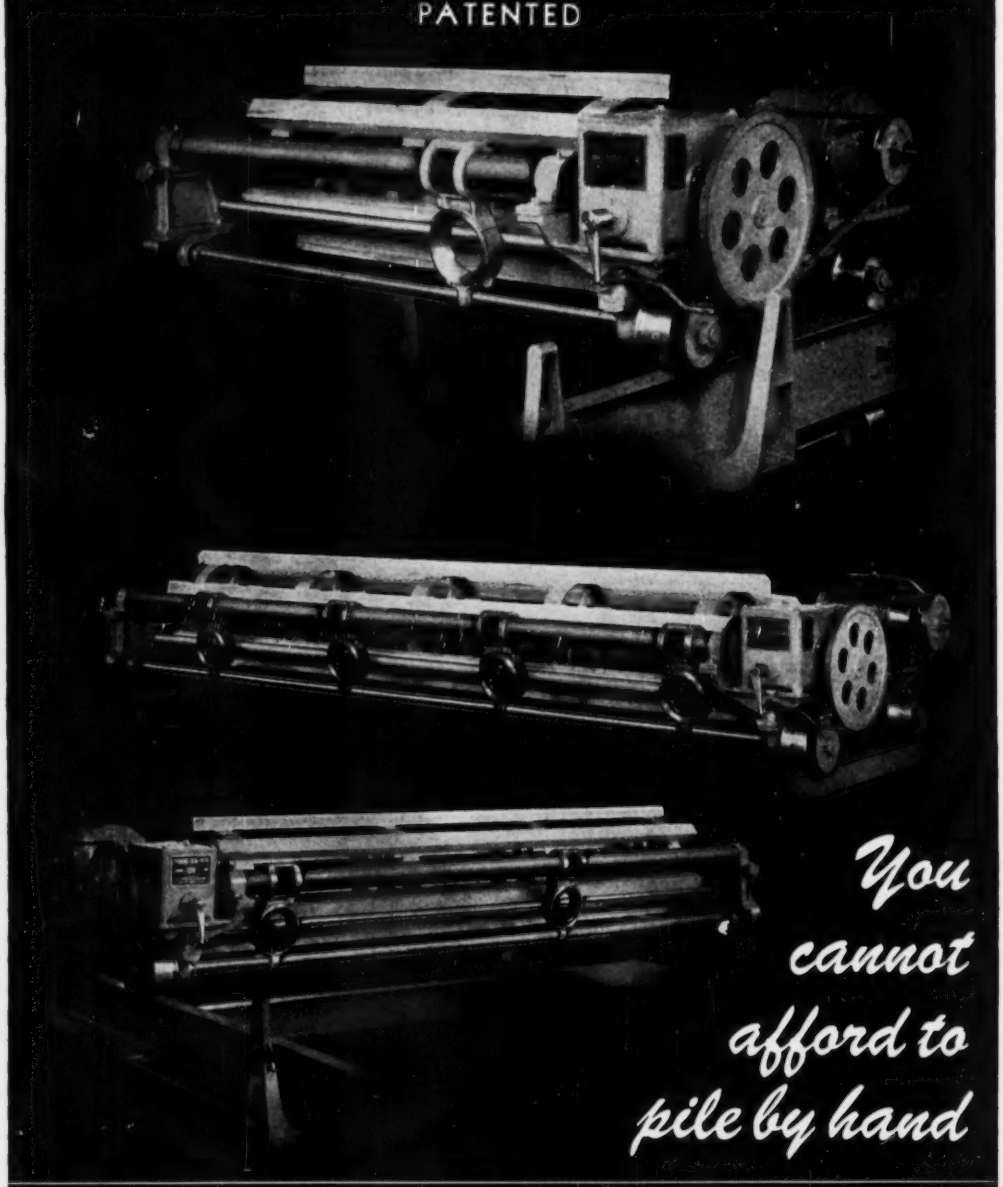
CRUCIBLE first name in special purpose steels

hot and cold rolled **STAINLESS SHEET AND STRIP**

STAINLESS • HIGH SPEED • TOOL • ALLOY • MACHINERY • SPECIAL PURPOSE • STEELS

PERKINS AUTOMATIC BIN PILERS

PATENTED



You cannot afford to pile by hand

B. F. PERKINS & SON, INC.

ENGINEERS AND MANUFACTURERS

HOLYOKE • • • MASSACHUSETTS

naphtols

fast color salts and bases

complete color range brilliant shades of red, scarlet, orange, yellow, green, blue, violet, brown and black.

fastness excellent fastness to light and washing.

versatility for dyeing fast colors on cotton and rayon yarn and piece goods . . . ground shades on cotton and rayon for white and colored effects . . . for prints on naphtol prepare . . . selected combinations for dyeing silk and nylon.

application simple and rapid . . . can be dyed on continuous range and all other types of equipment . . . G. D. C. naphtols have superior solubility, stability and wetting-out properties.

economy low cost . . . ease of application.

deliveries stocks carried in warehouses strategically located throughout the country insure prompt deliveries.

GENERAL DYESTUFF CORPORATION

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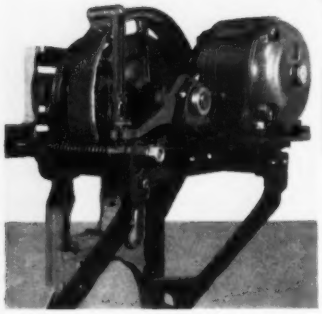
BOSTON · CHARLOTTE · CHICAGO · PHILADELPHIA · PROVIDENCE · SAN FRANCISCO

COST REDUCING

Stability

FOR YOUR LOOMS



The Bahan Top Girt gives a new conception of what can be accomplished with "E" Model looms.

MODEL "C" MOTOR DRIVE

A new unit which greatly reduces friction losses, the Model "C" motor drive is designed for installation directly on the loom side. Using two ball thrust bearings, a tapered bushing for simpler installation, and grease-lubricated bearings, this unit gives you a rigid and efficient drive. Furnished complete with crank shaft gear and new hand wheel or brake wheel. Ideal for use with new NEMA frame motor. Each unit is assembled, tested, and shipped complete with all bolts, nuts, and washers.
Can be furnished with 10-Pitch or 8-Pitch gears.

Bahan Top Girts give Model "E" looms far greater rigidity and reduced vibration so necessary to today's requirements of higher loom speeds, better quality cloth production, and lower maintenance cost.

Bahan Top Girts consist of two END SECTIONS, each containing bronze, grease-lubricated bearings for inside and outside of crank throw. Rigid, one-piece CENTER SECTION features machined flat surface with rectangular key and keyway for correct alignment of all bearings; and UPRIGHT SUPPORTS from floor to center section. The two cam shaft bearings are grease lubricated. Each Bahan Top Girt is factory aligned with new crank shaft before shipment.

ADVANTAGES OF BAHAN TOP GIRTS

- Greater production from present looms
- Smooth, high-speed loom operation
- Constant, positive bearing alignment
- Simplicity of installation
- Non-interference with stop motions

Contact us for facts and costs for your own specific needs.

BAHAN
TEXTILE MACHINERY CO.
GREENVILLE, S.C.

DESIGNERS AND MANUFACTURERS OF RELIABLE TEXTILE MACHINERY FOR OVER 30 YEARS

Heyden CHLORINATED BENZENES

MONOCHLOROBENZENE

ORTHODICHLOROBENZENE

PARADICHLOROBENZENE

TRICHLOROBENZENE

Heyden chlorinated benzenes (benzols) are widely used in organic syntheses and have extensive applications in the manufacture of solvents, insecticides, textile chemicals, medicinals, weed killers, polishes, explosives, soil and sewage disinfectants, protective coatings, and many other industrial and commercial uses.

ORTHODICHLOROBENZENE

This extremely versatile Heyden chlorinated benzene is in constant demand for the manufacture of petroleum products, metal polishes, soil disinfectants, automotive and industrial solvents . . . for sewage treatment, fumigants, dry cleaners, paints and surface coatings . . . and for wool scouring, gas purification, termite control and leather dyeing.

Heyden Chlorinated Benzenes are shipped in seller's cars from our plant at Memphis, Tennessee: Tank cars and drums.

PROPERTIES

Appearance	Clear, colorless, heavy liquid
Odor	Characteristic, pleasant, aromatic
Boiling Point	180°C.
Freezing Point	−17° to −22°C.
Specific Gravity 25°/25°C.	1.303
Flash Point (closed cap)	160°F.
Solubility	0.01 g./100 g. water at 25°C.; Slightly soluble in alcohol; Miscible with most other organic solvents
Containers	Tank cars, approx. 86,000 lbs.; 55 gal. drums—550 lbs. net

Benzaldehyde
Benzoates
Benzoic Acid
Benzyl Chloride
Bromides
Chlorinated Aromatics
Chlorobenzenes
Creosotes
Formates
Formaldehyde
Formic Acid
Glycerophosphates
Guaiacols
Hexamethylenetetramine
M.D.A. (Methylene Disalicylic Acid)
Paraformaldehyde
Parahydroxybenzoates
Penicillin
Pentaerythritols
Salicylates
Salicylic Acid
Streptomycin

Serving Industry through Finer Chemicals . . .

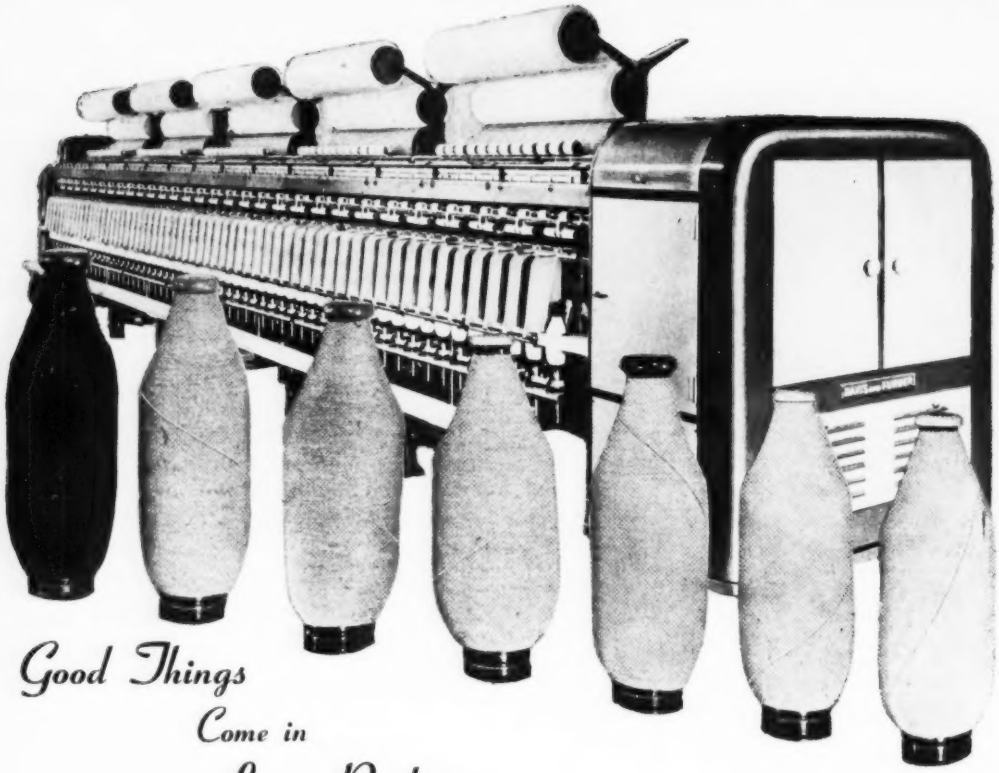
Memphis, Tenn. plant of Heyden, where chlorinated benzenes and chlorine are produced.

FINE HEYDEN CHEMICALS

HEYDEN CHEMICAL CORPORATION

393 SEVENTH AVENUE, NEW YORK 1, N. Y.

Chicago 6: 20 North Wacker Drive • Philadelphia 3: 1700 Walnut St. • San Francisco 11: 420 Market St. • RUMFORD DIVISION: Rumford 16, R. I.



Good Things Come in Large Packages

To paraphrase the old aphorism, we say, "Good things come in large packages and we can prove it."

For example: The large yarn packages produced by the new **Simplex Model "F"** wool spinning frame, result in much lower spinning costs.

The quality of the yarn is better too, which results in a higher grade of cloth.

Labor relations are improved by the decrease in workloads which the **Simplex** large yarn packages afford.

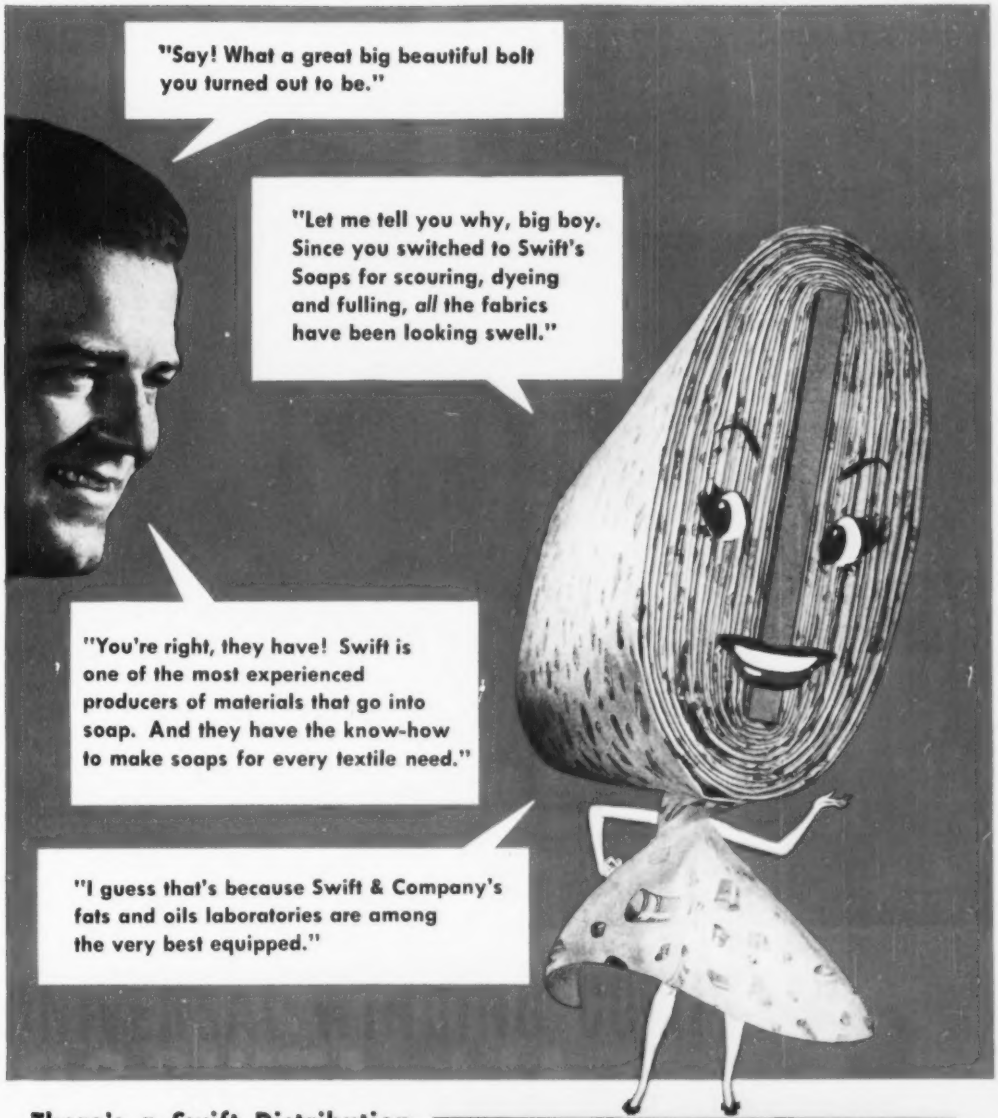
The efficiency of machines in later processes is stepped up to a notable degree.

There are other benefits too!

Do good things come in large packages? We think so and so do the mills who are using **Simplex** frames.

Send for the new booklet describing Model "F" in full detail.

NORTH ANDOVER, MASS.


"Say! What a great big beautiful bolt you turned out to be."
"Let me tell you why, big boy. Since you switched to Swift's Soaps for scouring, dyeing and fulling, all the fabrics have been looking swell."
"You're right, they have! Swift is one of the most experienced producers of materials that go into soap. And they have the know-how to make soaps for every textile need."
"I guess that's because Swift & Company's fats and oils laboratories are among the very best equipped."

There's a Swift Distribution Point near you...to give you fast, efficient service. Call on Swift for

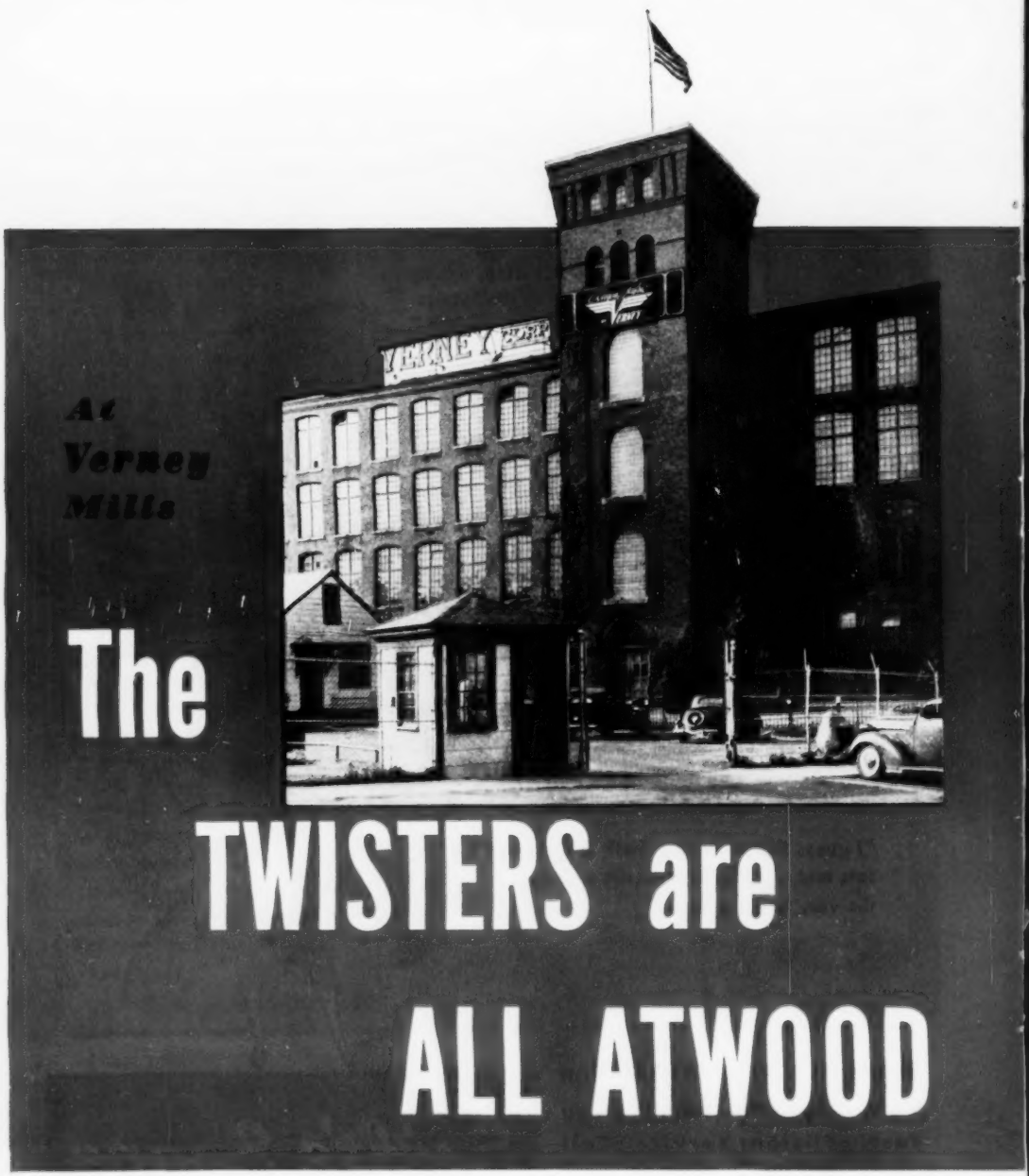
Vertex Flakes
557 Flakes
White Ribbon Flakes
Wool Flakes

In barrels and bags

Swift's Soaps

for every textile use

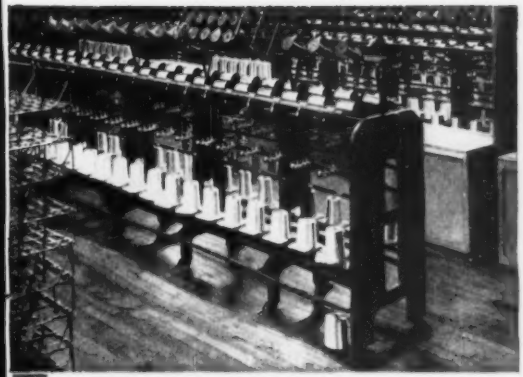
Swift & Company SOAP DEPARTMENT, CHICAGO 9, ILLINOIS



Consistently successful performance at the Verney Corp. mill in Brunswick, Maine, has led to the installation of more and more Atwood twisting machines.

This mill is *completely equipped* with Atwood – redraws, uptwisters and ring twisters.

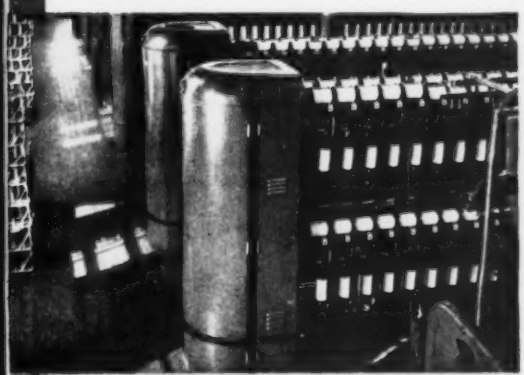
For more information, write direct or use Reader Service post card.



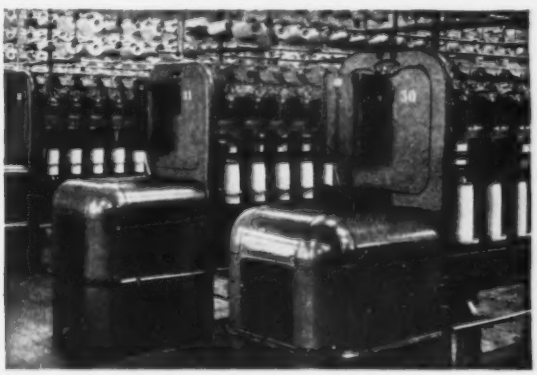
Rayon yarn being rewound from cones on Atwood Model 200 Redraws which produce spools of proper density and wind at high speed. The simplicity of construction and streamlined design make cleaning easy.

High-twist crepes are produced on Atwood Utility Up-Twisters. Spindle swing units are rigid, resulting in improved quality of work due to uniformity of twist and also in longer service life.

Up-twisting crepe yarn for Sheers on Atwood Model 110 Up-Twisters. Pre-spaced longitudinal spindle rail reduces erection time and gives the frame rigidity. Twist unit and gear-driven oil pump are totally enclosed. Unique bobbin hangers insure accurately positioned takeup.



Atwood Model 10 Ring Twisters producing combination yarns for men's suitings. The neat housing encloses motor, motor carriage, and a belt takeup assembly which keeps spindle drive uniform by automatically compensating for belt stretch. Automatic stop motion for each end and ply.



UNIVERSAL WINDING COMPANY

ATWOOD DIVISION

P. O. Box 1605 • Providence 1, R. I.

Boston • Philadelphia • Utica • Charlotte • Atlanta • Chicago • Los Angeles; Montreal • Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland

Agents in every principal textile center throughout the world

ATWOOD ®

UNIVERSAL *with its Atwood division, builds a complete line of* THROWING MACHINERY

Winding and Twisting Machinery for Natural and Synthetic Yarns

 For more information, write direct or use Reader Service post card.

avoid costly replacements

use PC FOAMGLAS

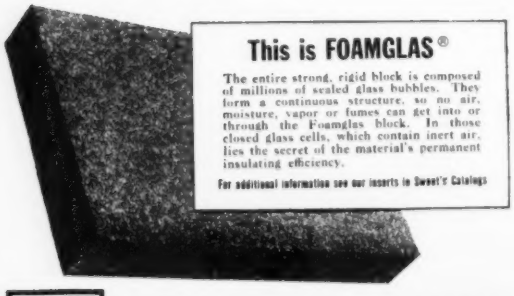
. . . the permanent insulation

● Maintenance, repairs and replacements can send mill insulating costs sky-high—unless you choose the most efficient, the most economical, the life-time insulating material. For high humidity, vapors, fumes, acid atmospheres soon impair the insulating efficiency of organic, fibrous and granular materials.

That is why so many mill superintendents use PC Foamglas on all insulating jobs. For PC Foamglas, when installed according to our recommendations and specifications, retains its original insulating efficiency *permanently*.

Foamglas is a true glass. It is moisture-proof, fireproof and verminproof. In its cellular structure lies the secret of its insulating efficiency, its ability to retard heat travel into or out of a textile mill. That helps to maintain desired temperature levels, to reduce condensation.

Our insulating specialists will be glad to help you work out your individual insulating problems, to show you where and how you can use Foamglas to the best advantage. Meanwhile, why not send the convenient coupon for our recently published booklets on insulation?



This is FOAMGLAS®

The entire strong, rigid block is composed of millions of sealed glass bubbles. They form a continuous structure, so no air, moisture, vapor or fumes can get into or through the Foamglas block. In those closed glass cells, which contain inert air, lies the secret of the material's permanent insulating efficiency.

For additional information see our inserts in Sweet's Catalogs

Pittsburgh Corning Corporation
Dept. M-109, 307 Fourth Avenue
Pittsburgh 22, Pa.

Please send me without obligation, your new booklets on the use of PC Foamglas Insulation as checked below and a sample of PC Foamglas:

Roofs ☐ Walls ☐ Floors ☐

Name .....

Address .....

City ..... State .....

PITTSBURGH ® PC CORNING

FOAMGLAS INSULATION

. . . when you insulate with FOAMGLAS . . . you insulate for good!

For more information, write direct or use Reader Service post card.

MEADOWS

BALL-BEARING TAPE TENSION PULLEYS

Many mills are meeting today's problem of *raising* quality and output, while *lowering* production costs, by replacing worn and stickly plain-bearing tape tension pulleys with Meadows Ball-Bearing Units.

These *Meadows Modernizers* save *power*, by preventing power loss due to gummed pulleys; save *money*, by maintaining uniform spindle speed, and eliminating rejects due to slack yarn; save *time* by eliminating tapes sliding off pulleys when starting up.

Different pulley sizes, brackets and weights to handle any frame up to heaviest cable twisting.

All Meadows Modernizers are easy to install. Write us for prices and information.

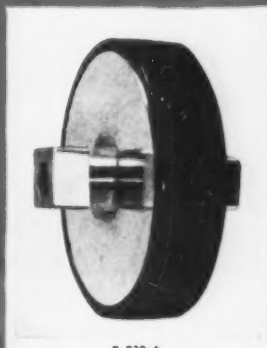
B-212R-213
For Whitin Twister. Pulley 4-5/16" dia x 2" face. Can also furnish pulley B-226, 4¼" dia x 1⅝" face.

B-214L-202
For Whitin and Saco-Lowell Spinning. Can also be adapted to other make frames by use of Meadows accessories. Pulley 3-3/16" dia x 1¼" face.

B-211R-213
For Twisting frames. Pulley 4-5/16" dia x 2" face. Can also furnish Pulley B-226, 4¼" dia x 1⅝" face.

B-205L-202
For Prince-Smith, Hall-Stell and Saco-Lowell worsted spinning. Pulley 3-3/16" dia x 1¼" face.

B-216L-202
For Mason Spinning. Pulley 3-3/16" dia x 1¼" face.



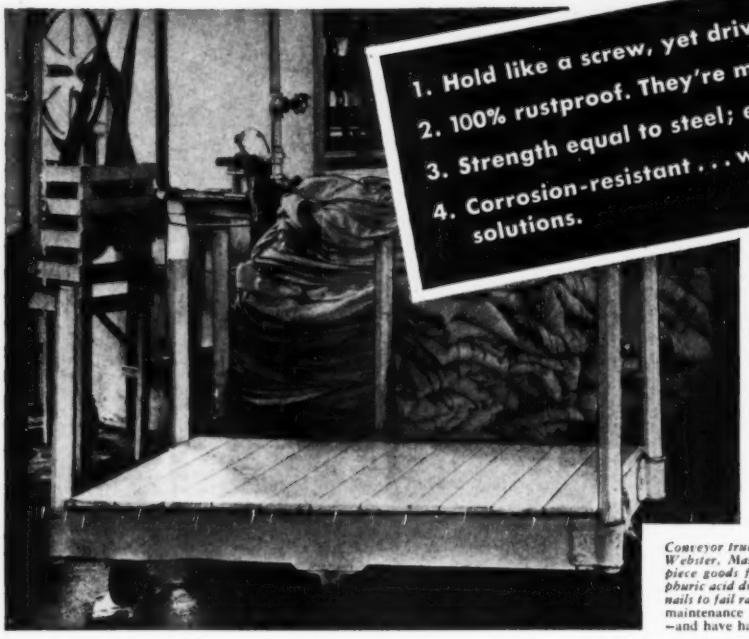
B-730-4
Drop-in Pulley for H & B Spinning. Dia 4" x 15/16" face. Can also furnish for Saco-Lowell and Whitin spinning frames.

B-275-282
Idler Pulley for Atwood Throwing. 3" dia x 2" face. Furnished for other makes of frames.

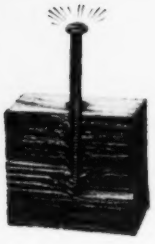
MEADOWS MANUFACTURING CO. · ATLANTA, GA.

You get 4-Way Protection PLUS Economy with

ANCHORFAST NAILS



1. Hold like a screw, yet drive like a nail.
2. 100% rustproof. They're made of MONEL.
3. Strength equal to steel; extra stiffness.
4. Corrosion-resistant . . . won't contaminate solutions.



Conveyor trucks in service at Packard Mills, Inc., of Webster, Mass. These trucks are used to transport piece goods from scouring room to dye house. Sulphuric acid drippings from the goods caused ordinary nails to fail rapidly in this application. Packard Mills maintenance men switched to 2" Anchorfast Nails —and have had no further corrosion troubles!

With *Anchorfast*† *Nails*, you get the holding power of a screw at the cost of a nail. You may eliminate hole-drilling and setting compounds. AND you get outstanding protection from rust and corrosion.

These are the features that make *Anchorfast Nails* favored fastenings among textile processors.

Because they're made of rustproof, corrosion-resistant MONEL*, *Anchorfast Nails can't* rust or harmfully contaminate solutions.

Their extra stiffness means less spoilage under the hammer. Still another valuable feature . . . the special annular grooves around the shank of *Anchorfast Nails* prevent "pulling out" caused by alternate swelling and shrinking of the wood. This makes it possible to use *Anchorfasts* in conditions of sharply varying humidity where ordinary nails would fail.

Leading fabric processing plants use *Anchorfast Nails* as fastenings for vats, tubs, ducts, floors, ceilings, conveyor trucks — wherever adverse conditions of stress, humidity, and chemical corrosion must be defeated.

Anchorfast Nails may be the answer to many of *your* fastening problems, too. Why not investigate their unusual advantages today? Write for FREE testing device and list of distributors.

*Reg. U.S. Pat. Off. International Nickel Co.
†Reg. U.S. Pat. Off. Independent Nail & Packing Co.

Monel*... *for lower maintenance

EMBLEM OF SERVICE
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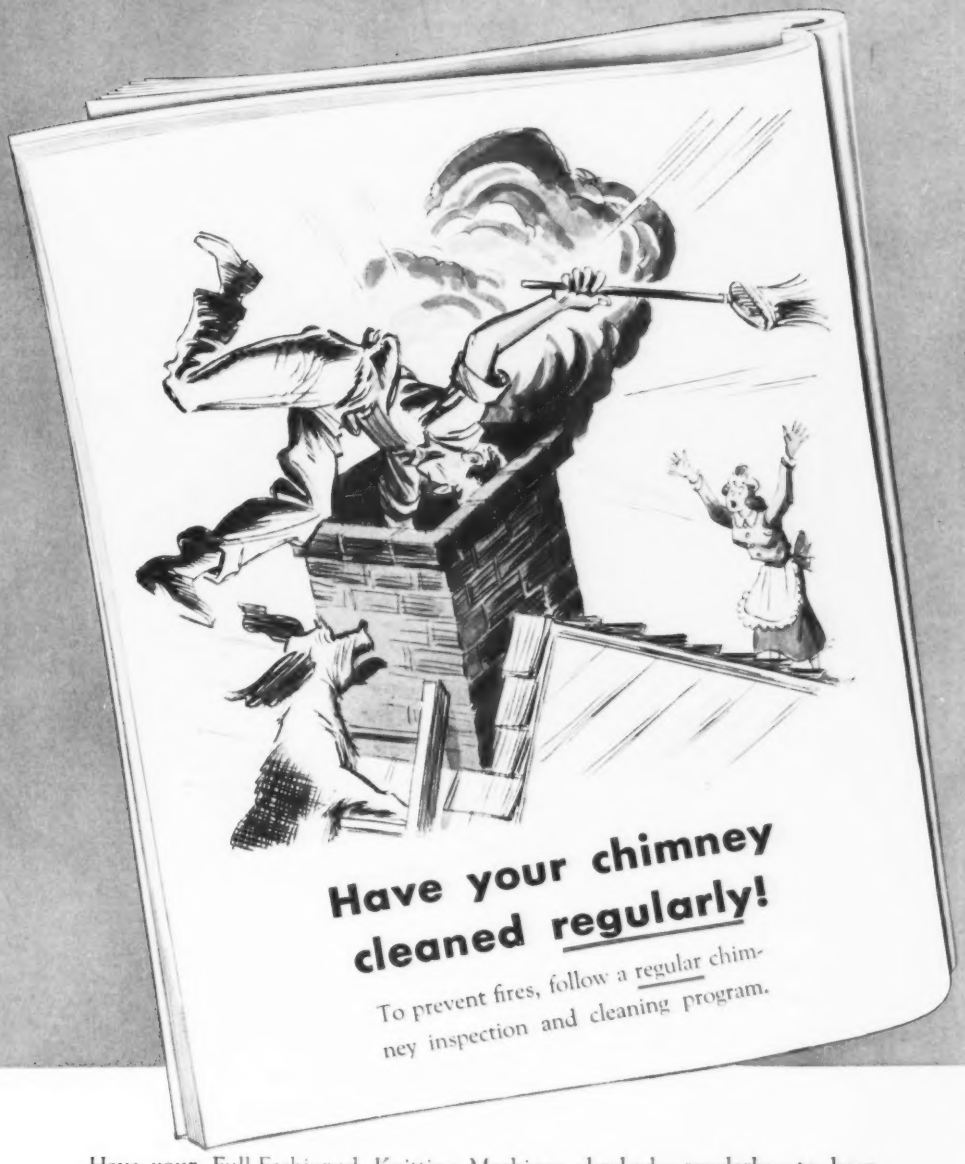
TRADE MARK

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

For more information, write direct or use Reader Service post card.



Have your Full-Fashioned Knitting Machines checked—regularly—to keep them at highest efficiency . . . Follow a regular program for reneedling and your needle bars are always in shape for better knitting . . . Follow a regular program for reconditioning and your plant is always at peak performance. We will be glad to discuss this matter of regularity as it applies to your mill operation.

TEXTILE MACHINE WORKS • READING, PA.

The "READING"
Full-Fashioned Knitting Machine

Where straightness is important

Check a Textile Spring-Beard Needle for straightness and you'll find precision straightness of butt, shank, stem and beard — straightness where it's vitally important. You'll see perfect spacing in the knitting bars—true alignment for top quality knitting.

Each stage in the manufacture of Textile Spring-Beard Needles is unerringly checked through Textile's quality controls, automatic and electronic which bring about this scientifically-accurate straightness.

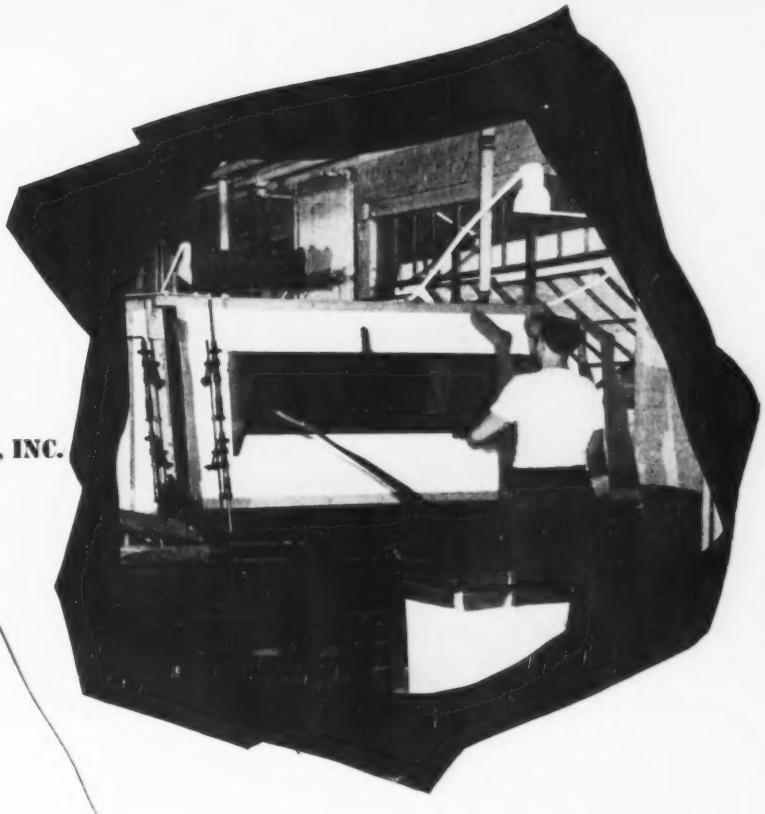
Precision straightness is but one of the many advantages you receive through Textile's quality controls. For better quality knitting and for profitable knitting, specify Textile Spring-Beard Needles for your needle bars.

TEXTILE MACHINE WORKS, READING, PENNA.

Textile

SPRING-BEARD NEEDLES

For Full Fashioned and Warp Knitting

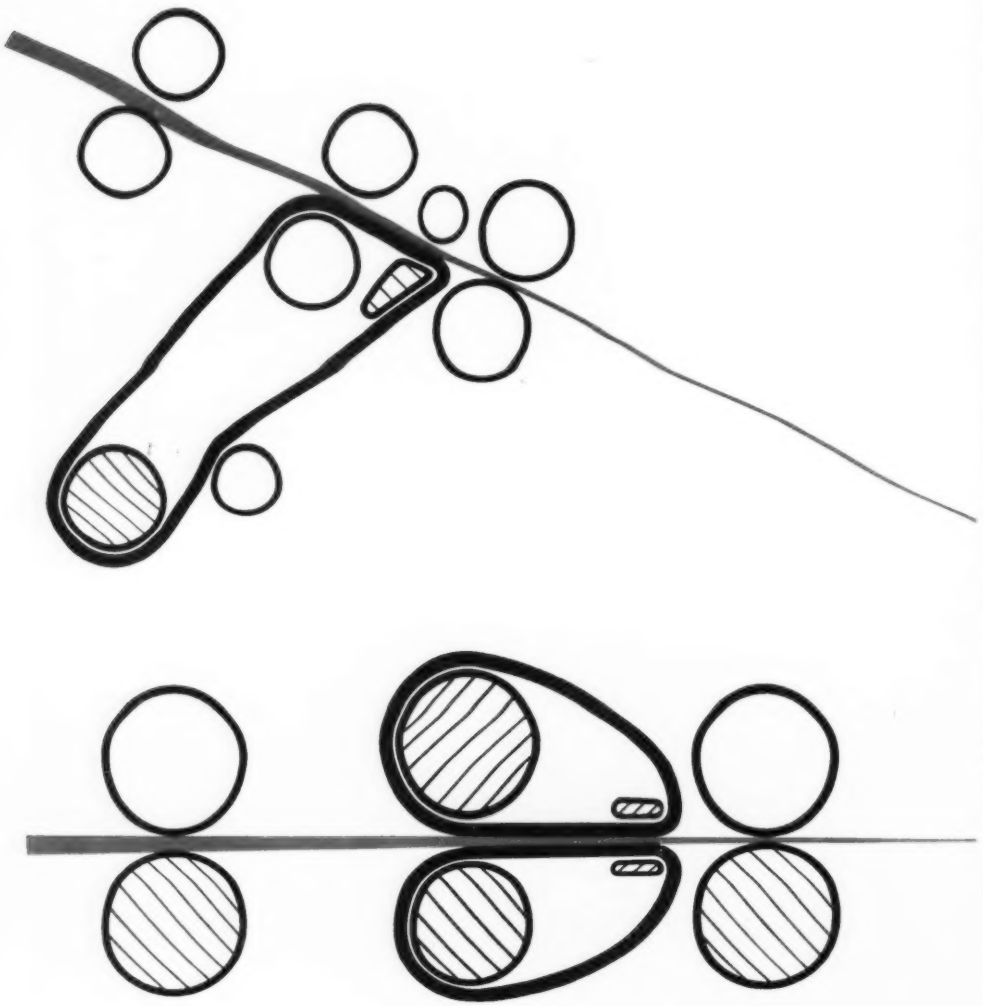


HANS C. BICK, INC.

Hans C. Bick, Inc., of Reading, Pa., is a name that is well known in the hosiery industry. It is a name that is associated with top quality finishing. Since finishing is the only service that the Hans Bick organization has to sell, they must select their "finishing" or boarding equipment to assure top quality results at all times. That is why this company is completely equipped with Proctor automatic boarding machines. Ever since its introduction to the field, about thirty years ago, Proctor automatic boarding equipment has been producing top quality results consistently because its design has kept pace with the mill's needs. It is designed to relieve boarders of every task except actually placing hosiery on the boards. In this way they can concentrate all of their attention to doing a quality job. The machine automatically does the rest—drying, stripping, piling and counting. If you are not already familiar with this most modern of all boarding equipment, write today for details.

PROCTOR & SCHWARTZ, INC.
710 TABOR ROAD
PHILADELPHIA 20, PA.

How to reduce downtime



ACCOTEX COTS
CORK COTS

caused by apron failure

Accotex Aprons last longer on both single and double belt systems

Two common causes of apron failure—broken seams and curled edges—are eliminated when you use Armstrong's Accotex® Aprons on your long draft frames.

With Accotex, there are no seams to break open—no seams to cause irregular slip roll action. Seamless layers of special Accotex rubber provide lastingly smooth wearing surfaces on both the inside and the outside of the apron.

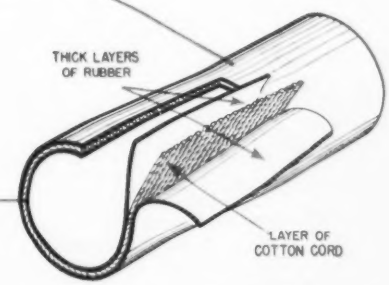
Sandwiched between the rubber wearing surfaces is a sturdy cord interliner that absolutely will not stretch. Interlined Accotex Aprons also prevent curled edges.

This special construction—developed and patented by Armstrong—makes Accotex Aprons last longer. Many still spin quality yarn after more than five years of continuous service without maintenance.

In addition, Accotex Aprons produce clean running work with little waste. Special non-oxidizing rubber gives them a surface that stays smooth and resilient—one that resists grooving. They will not scuff or become hard or brittle with age.

Accotex rubber gives the aprons excellent flex life, too. They hug the nose bar without buckling. Unaffected by oil, temperature changes, or humidity, Accotex Aprons always fit snugly on your frames.

See for yourself how carefully engineered materials and construction of Accotex Aprons outperform natural products. A test installation can be easily arranged by your Armstrong representative. Call him today. Or write Armstrong Cork Co., Textile Products Dept., 8310 Arch St., Lancaster, Pa. Available for export.



Armstrong's Accotex Aprons are available for single or double apron long draft equipment for roving as well as spinning frames. They are ground to the exact thickness you specify . . . are uniform in density and over-all size.

ARMSTRONG'S ACCOTEX APRONS

BETTER CARDING

...IN A NUTSHELL

Get down to the meat of your carding problems by following these three simple rules —

The Ashworth "Rule of 3"

RULE 1 — Select the correct type of card clothing for the purpose. Be sure; get the advice of experienced Ashworth men.

RULE 2 — Select a card clothing source which can give you the best in quality and a complete range . . . when you want it . . . where you want it. Backed by more than 50 years of manufacturing experience, 4 factories, 6 repair shops and 7 distributing points in all important textile areas, Ashworth is the answer.

RULE 3 — Keep your card clothing, card bearings and chains in good condition; inspect them periodically. Use Ashworth Surveys for this purpose. They're free of charge and will enable you to plan repairs so they will involve minimum loss of production time.

PRODUCTS AND SERVICES:

Card Clothing for Cotton, Wool, Worsted, Silk Rayon and Asbestos Cards and for all types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Top Flats Reclothed.

Write or call us for further information.

ASHWORTH BROS., INC.
AMERICAN CARD CLOTHING CO.
(Woolen Div.)

Fall River*†‡ Worcester*‡ Philadelphia*†‡ Atlanta†‡
Greenville†‡* Charlotte†‡ Dallas†‡ (Textile Supply Co.)
*Factory †Repair Shop ‡Distributing Point

Ashworth

PIONEERS IN CARD CLOTHING

4 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

KERANOL NK

gives **COTTONS AND RAYONS**

a very **DESIRABLE, SOFT, FULL HAND**

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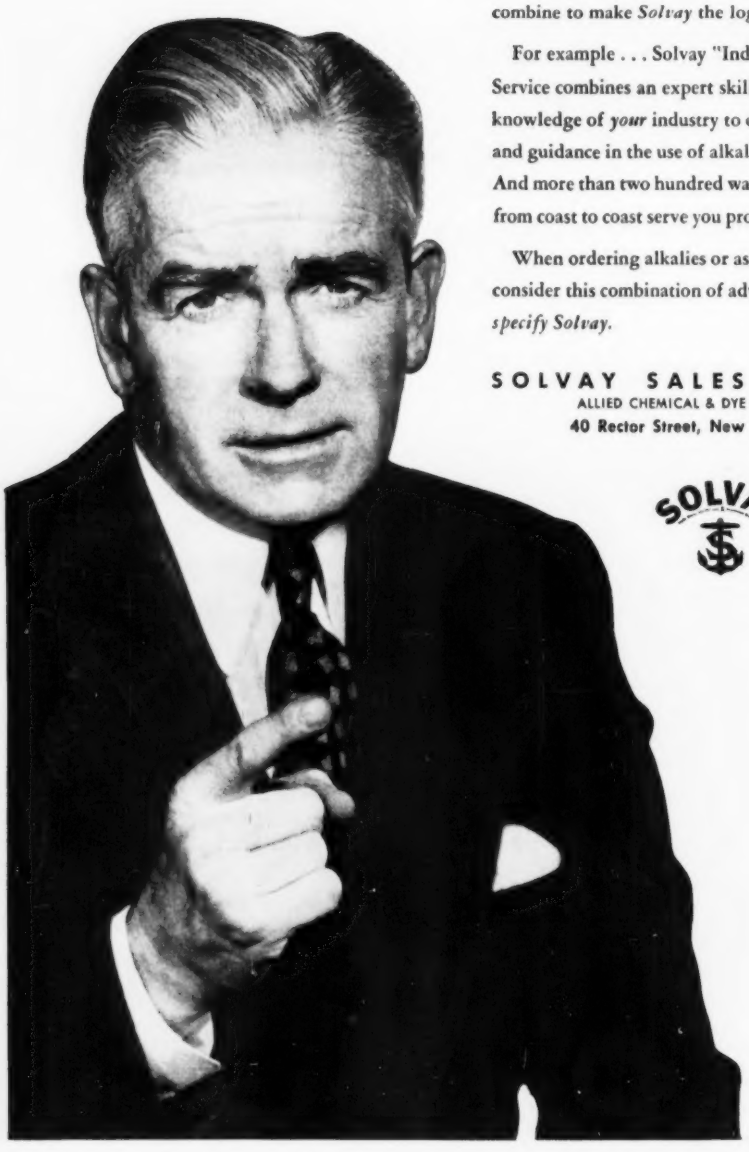

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- Monochlorobenzene
- Methanol
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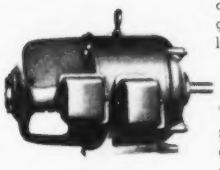
Type SC—OPEN PROTECTED—Form J, general purpose motor—meets the needs for most installations where operating conditions are relatively clean and dry. The top half of the motor frame is closed to keep out falling solids or dripping liquid.

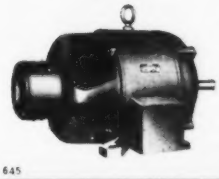
Type SC—SPLASH PROOF—gives the necessary protection where plants must be washed down—keeps water out of the motor even when a hose is applied directly on the frame. Also provides protection against rain, snow, sleet and ice for outdoor installations.

Type SC—TOTALLY ENCLOSED FAN COOLED—protects against dusts, mist or fog detrimental to the vital parts of the motor. The inner frame protecting the motor is sealed to keep out harmful matter.

Type SC—EXPLOSION PROOF protects against atmospheres charged with explosive dusts or gases. They carry Underwriters' label for specific kinds of hazards.



Type SR—SLIP RING—wound rotor motors are suitable for applications requiring low starting current with high starting torque, reversing, or adjustable speed.



Type SY—SYNCHRONOUS MOTORS suitable for continuous operation at a uniform load for power factor correction.

645

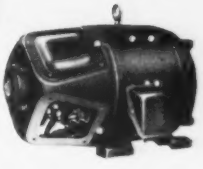
SINGLE PHASE

Type RS—REPULSION START INDUCTION—single phase brush lifting motor suitable for applications requiring high starting torque with low starting current.

Type CSH—CAPACITOR START INDUCTION—single phase motor suitable when high starting torque with normal starting current is required.

Type SP—SPLIT PHASE, INDUCTION—single phase motors—suitable for light starting duty.

DIRECT CURRENT



Type DN—DIRECT CURRENT MOTORS—suitable for use where direct current is available or its use desirable.

These illustrations are typical of Century's complete line of motors. Others available include gear motors, generators, AC and DC motor generator sets.

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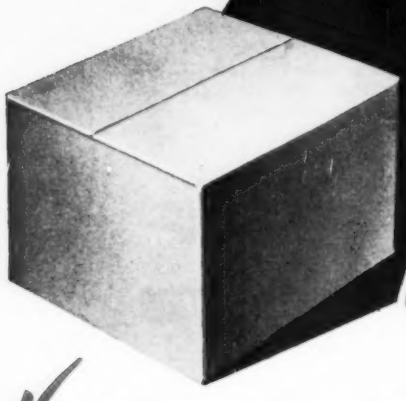

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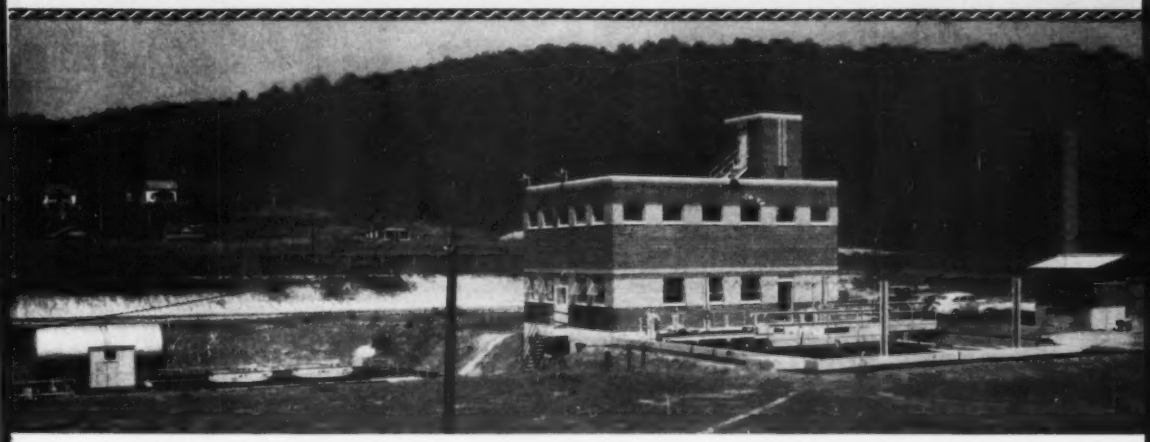


WASTE-TREATMENT PLANT at James Lees & Sons Co. carpet mill at Glasgow, Va., removes 97% of the grease, 96% of the suspended solids, and 60% of the biochemical oxygen demand (B.O.D.) from mill dyeing and wool scouring waste before effluent is allowed to return to the Maury (North) River in the beautiful Shenandoah Valley.

CONTINUOUS TREATMENT
Of Textile Wastes

HIGHLIGHTS: *Many states becoming stringent in pollution laws—Very high perecentage of waste content is removed chemically from effluent at James Lees & Sons Co., Blueridge Div., carpet mill—Plant costing almost $400,000 to build treats 250,000 gal. of waste water a day—Neutralization of alkaline scouring waste by acid dyeing waste and use of filter-plant lime sludge help reduce cost of operation.*

By ROBERT E. OBERHOLTZER
Chief Plant Engineer, James Lees & Sons Co.

STATES ALL UP AND DOWN the Atlantic seaboard have begun to impose more rigidly on the textile industry its proportion of responsibility in keeping rivers and streams clean and clear from liquid and solid wastes made during processing. Woolen and worsted mills especially are due for their share of headaches trying to meet the requirements of these laws. Producing carpets, for example, requires wool scouring and dyeing operations; and these in turn produce industrial wastes as an undesirable by-product.

In July, 1946, the passage by the Virginia State Legislature of a water-control act made it necessary for the carpet mill of James Lees & Sons Co., Glasgow, Va., to be provided with works for the treatment of liquid industrial wastes from the scouring and dyeing extension of the mill that was then under construction. An extensive waste-treatment plant was designed by Metcalf & Eddy, Engineers, Boston, Mass., following a treatment system developed in the Lees laboratories by the joint efforts of James Lees and Metcalf & Eddy technicians. The plant has now been put into full operation and consists of the steps listed at right and shown in detail on succeeding pages.

1. **BAR RACKS** screen out wool fibers before wastes enter equalization tanks.

2. **EQUALIZATION TANKS** act as surge tanks to allow the treatment plant to be operated at a relatively uniform rate. During detention in these tanks, the varying strengths, colors, and temperatures of the wastes are leveled off.

3. **ACID MIXING TANK** brings dyeing and scouring wastes together in desired proportions. Here the acid dye wastes are used to neutralize alkaline scouring wastes with the addition of sulphuric acid as required to complete cracking of wool greases.

4. **FLOCCULATING AND SETTLING TANKS** 1 and 2 settle out the flock formed by the acid-cracking. Slow-moving scum and sludge collectors remove solids and send them to sludge lagoons, while liquids go on to neutralization treatment.

5. **NEUTRALIZATION MIXING TANK** receives settled acidified waste liquids. Acidity is neutralized by combination of company water-treatment-plant lime-sludge waste and commercial hydrated lime. Ferric-sulphate solution is added when necessary to assist coagulation.

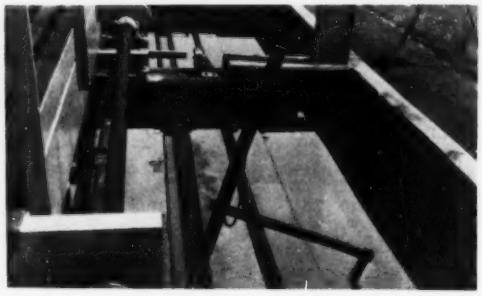
6. **FLOCCULATING AND SETTLING TANKS** 3 and 4 collect and send to sludge lagoons the secondary precipitation of solids caused by neutralization. Remaining clear liquid is then discharged into the Maury River.

For more details and pictures on the operation of this modern continuous waste-treatment plant that successfully handles a quarter of a million gallons of waste water a day, see the next four pages.

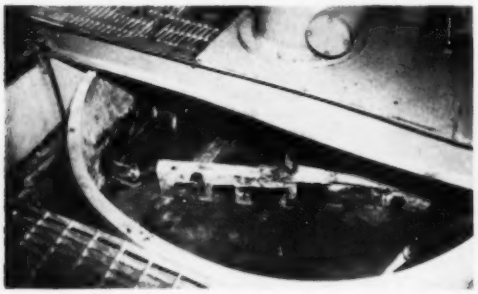
1 *BAR RACKS are made of wrought iron for the scouring-waste channel (grating removed) and of wood for the dye-waste channel. Wastes pass through by gravity on way to equalization tanks. Screenings are removed periodically by hand, drained, and burned in an incinerator. Distribution basins located between mill and bar racks take care of possible bar-rack overflow at moment of high-rate discharge from scouring trains or dye kettles.*

2 *EQUALIZATION TANKS are three in number. The screen at bar-rack discharge has been lifted to show more clearly the dye wastes entering the middle tank. Bottoms of two dye-waste tanks are level and have hopper-shaped suction sumps at the effluent ends (foreground). Scouring-waste tank at left has four paddles on a horizontal drive shaft to prevent settling of grease and grit-laden waste. Tank bottom is trough-shaped.*

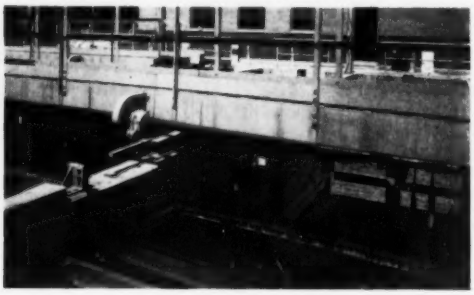
5 *RATES-OF-FLOW CHARTS of wastes into acid-mixing tank are scrutinized by Thomas T. Janney, plant engineer, and Oscar Painter, waste-plant operator. Overhead sulphuric-acid tank, located behind brick post, feeds to acid-mixing tank (center) for control of acidity to aid flocculating and settling of solids. Mixing tank is of steel, lined with acid-resistant plastic paint. Mixing paddles turn at rate of 9 rpm.*



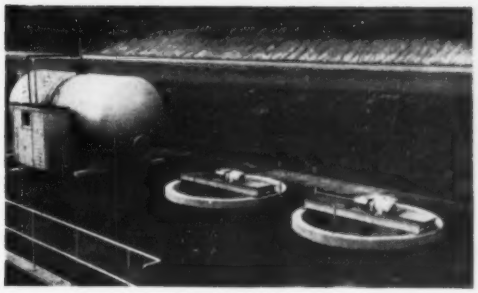
6 *ADJUSTABLE SCUM-REMOVAL PIPE at end of acid flocculating and settling tanks is shown in action ready to receive scum being pushed slowly into it by scum-collector blade. This blade is mounted on a reciprocating carriage which moves back and forth the length of the tanks at rate of 3 ft. per min. Scum is drawn off and pumped to sludge lagoons; as is sludge, which settles to bottom of tank and is scraped into hopper by underwater collectors.*



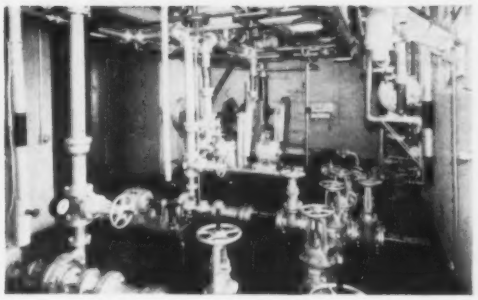
9 *NEUTRALIZATION MIXING TANK, with floor grating removed to show agitator and outlet, located in chemical building next to acid mixing tank, receives settled acidified liquor from acid flocculating and settling tanks (Fig. 6). A combination of lime sludge from water-purification plant and supplementary commercial hydrated lime from dry-chemical feeder neutralizes liquor. Ferric-sulphate solution is also fed to mixing tank when necessary to assist clarification. After 15-min. detention, the neutralized liquor flows to tanks outside.*



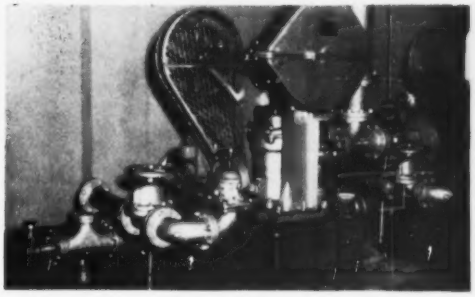
10 *NEUTRALIZED-WASTES FLOCCULATING AND SETTLING TANKS receive the neutralized liquor and submit it to gentle agitation and final precipitation during a 4-hr. detention period. The reciprocating-carriage-type sludge and scum collector is shown in this shot of full tank No. 3 and temporarily empty tank No. 4. Clarified effluent from tanks 3 and 4, finally neutralized to the requirements of the stream, flows over a baffled weir into the outfall pipe leading to the Maury River.*



3 *STORAGE TANKS for commercial sulphuric acid (left) and for waste lime sludge (center and right) obtained from mill water-filtration and softening plant are located near waste-equalization tanks. Regulated proportion of 66° Baume acid is added to combined wastes in acid mixing tank in chemical building to assist precipitation of solids in first flocculating and settling tanks. Lime sludge aids in later neutralization of settled acidified liquor.*



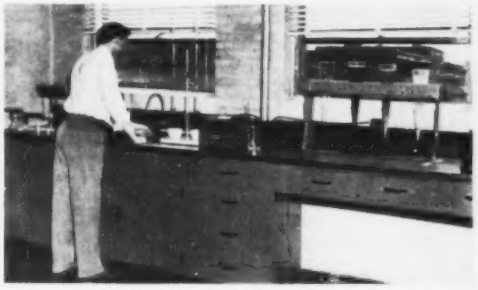
4 *PUMP ROOM in basement of chemical building contains separate pipe systems with Kennison-nozzle and orifice-meter flow-measuring devices for waste liquors en route to acid-mixing tank (center background). Pumps for both scouring and dye wastes have been installed in duplicate to allow for maintenance during plant operation. 5 hp. motors drive diaphragm pumps on scouring-waste lines; 2-hp. motors drive stainless-steel centrifugal dye-waste-lines pumps.*



7 *SLUDGE PUMP, located in basement of chemical building, pumps scum and sludge from flocculating and settling tanks out to sludge lagoons. Two pumps provide for continuity of operation during maintenance and repair. The force main is of 6-in. cast-iron pipe and is equipped with a removable section for inserting a pipe cleaner operated by high-pressure water if cleaning of sludge line becomes necessary.*

8 *SLUDGE LAGOONS receive flocculated wastes pumped to them from the settling tanks. Earth dikes are 10 ft. high. Wastes are discharged into the lagoon at the farthest point from where the supernatant liquor is drawn off. Drawoff chamber (foreground), made of concrete, timber baffles, and stop logs, withdraws clear supernatant liquor from consolidating sludge. Supernatant liquor drains back to dye-waste equalization tanks and is reprocessed.*

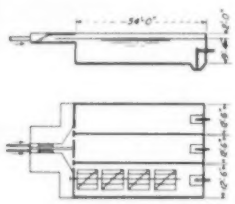
11 *FINAL NEUTRALIZED EFFLUENT, the product of careful treatment and frequent tests, flows over the final baffled weir on its way to the Maury River. The river outlet is located at the thread of current in about 4 ft. of water at low stage. This final effluent is checked at regular intervals by the Virginia State Water Control Board. The waste-treatment plant is operated 24 hrs. a day by three operators, each working an 8-hr. shift. Consequently, processing of wastes never stops during the work week.*



12 *LABORATORY in chemical building is the scene of tests made periodically to be sure the proper dosage of chemicals is being applied. Changes in characteristics of the scouring liquor of dye-house wastes require only infrequent adjustment in the settings of the acid and lime feeders. Results of the over-all operation are shown by the cones at the window sill. First cone is empty, second cone is untreated waste, and fourth cone is the final effluent. Note clarity as shown by coin in bottom of fourth cone.*

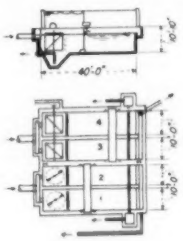
CONSTRUCTION DATA

1. Volume of Wastes, gallons per day
   - Wool and yarn scouring 73,000 (30%)
   - Dyeing 177,000 (70%)
   - 250,000 gallons
2. Bar Racks (2)
   - Channel dimensions, feet 1.5x3.0
   - Bar spacing, clear, inches ..... ¼
   - Rack slope, to horizontal ..... 30°



3. Equalization tanks (3)
   - Dimensions, each feet 54x12.5x11.3
   - Volume, each, gallons 40,000
   - Detention period, hours
     - Scouring wastes 6½
     - Dyeing wastes 5½
   - Protection against acids (Tanks 2 and 3) acid-proof membrane
   - Mechanical equipment
     - Tank 1 (scouring wastes) ... 4 horizontal agitator paddles
     - Tanks 2 and 3 ..... none
4. Acid and neutralization mixing tanks (1 each)
   - Dimensions, feet 7.3x10.8
   - Volume, each, gallons 2,600
   - Detention period, hours ..... ¼
   - Protection against acids, each ..... acid-proof membrane
   - Mechanical equipment, each ..... vertical mixer
5. Flocculating and Settling Tanks (4)
   - Dimensions, feet 40x10x10.5
   - Volume, each, gallons 24,000
   - Detention period, hours
     - Flocculating ..... ½
     - Settling 4

Protection against acids (Tanks 1 and 2) acid-proof membrane
Mechanical equipment
- Flocculating (Tanks 1 and 2) ..... 2 vertical agitators
- (Tanks 3 and 4 ..... 1 horizontal agitator
- Settling (all tanks) ..... sludge and scum collector



6. Sludge Lagoons (2)
   - Water-depth, feet 8
   - Volume, cubic feet 270,000
   - Dikes, top width, feet 4
   - Dike slopes, horizontal to vertical 2:1
7. Pumps:
   a. Scouring wastes (2)
      - Type ..... Duplex plunger
      - Capacity, each, gallons per minute 150
      - Flow measurement ..... Kennison nozzle
   b. Dyeing wastes (2)
      - Type ..... Centrifugal
      - Capacity, each, gallons per minute 150
      - Flow measurement ..... Orifice meter
   c. Lime sludge (1)
      - Type ..... Simplex plunger
      - Capacity, each, gallons per minute 50
   d. Chemical sludge (2)
      - Type ..... Simplex plunger
      - Capacity, each, gallons per minute 60

RESULTS OF ANALYSES

Combined Wastes and Final Plant Effluent
(Analyses by Virginia State Water Control Board, February 1 and 2, 1949)

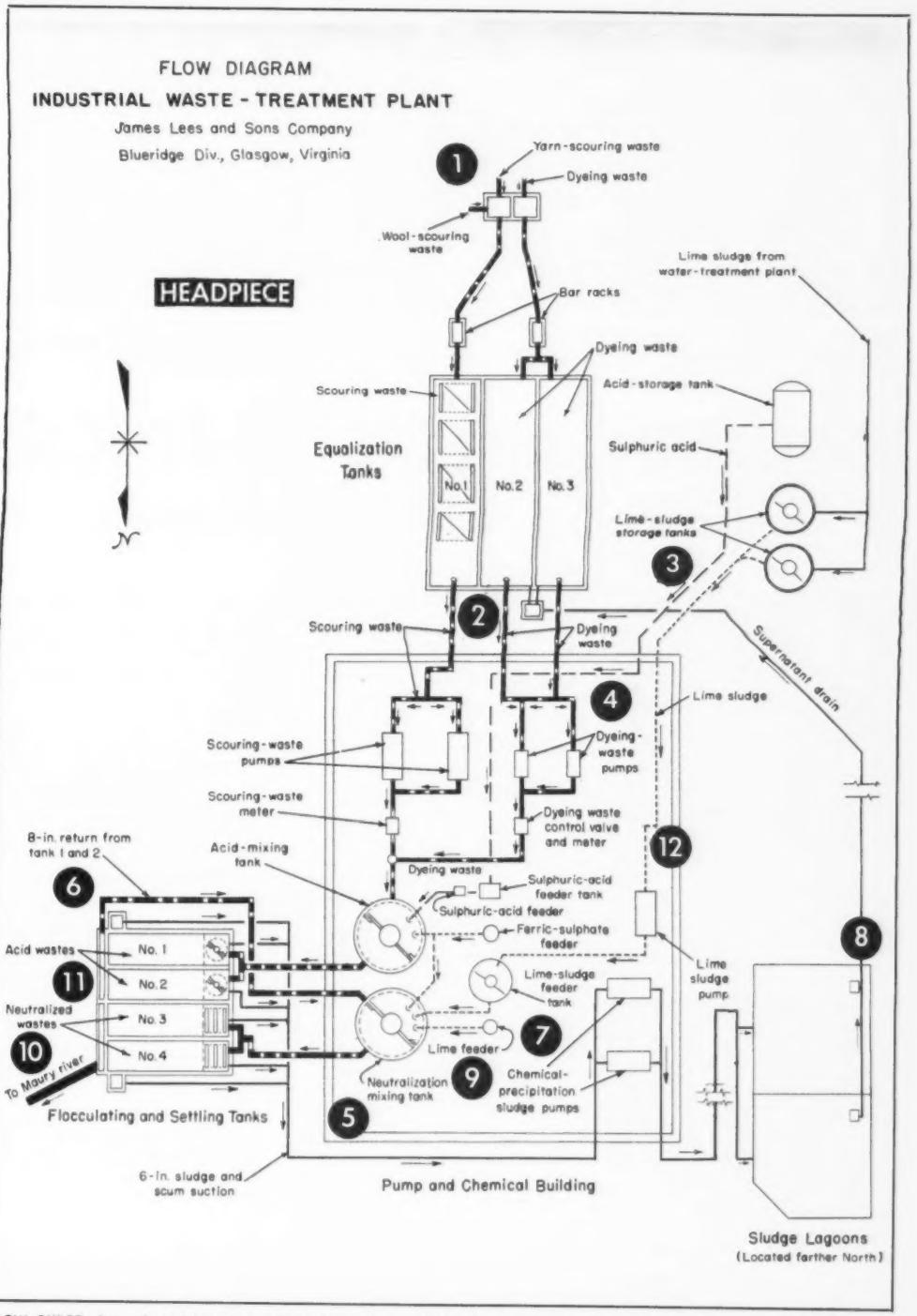
	MIXED WASTES	FINAL EFFLUENT	PERCENT REMOVED
Biochemical oxygen demand (B.O.D.)	2,260	915	60
Residue on evaporation			
Total	9,455	7,617	19
Volatile	3,755	1,743	54
Fixed residue	5,690	5,874	—3
Suspended solids			
Total	3,793	156	96
Volatile	2,640	40	99
Fixed residue	1,153	116	90
Alkalinity as $CaCO_3$	933	734	21
pH Index	7.3 ±	7.8 ±	—
Grease	1,600	51	97

COST OF INSTALLATION
In Three Stages

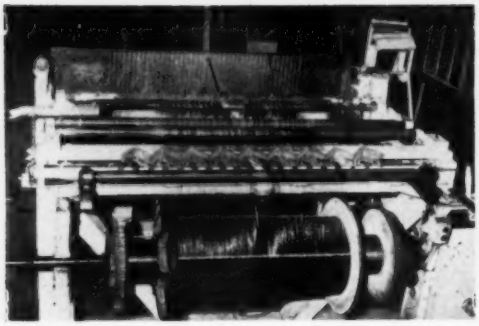
In order that manufacturing operations might be started, the plant was constructed in three distinct stages, as required by the Water Control Board. Wastes were first discharged untreated into lagoons. Next, a temporary method of treating the wastes with acid and lime was installed and operated while the permanent plant was under construction. Finally, the permanent plant was completed and placed in operation.

Approximate costs of each stage are indicated:

1. Lagoons	$ 16,100
2. Temporary arrangement used during construction	9,300
3. Permanent plant	340,900
TOTAL	$366,300



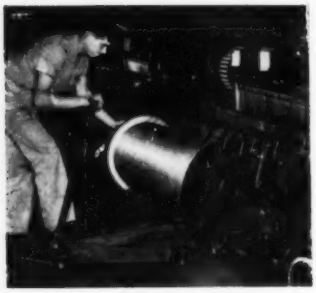
FLOW CHART shows physical layout of waste-treatment plant. Black figures, running from "Headpiece" to No. 12, have been added for reader convenience in locating positions from which photographs were made.



DOUBLE-BOBBIN CREEL (in background) permits warping directly to loom beam. Bobbin tension should be light, but a hard beam should be built by using tension rollers.

DOUBLE HOOK speeds entering. Drop-wires and heddles are drawn simultaneously. Rolling ends can be prevented by using separate heddle for each end, even when two ends weave as one.

MONOFILAMENT FABRICS
Require Special Techniques



AUTOMATIC LOOM shown has pins in arch for holding splicing bobbins. Ends drawn in are not knotted. Some monofilament yarns can be machine knotted when new warp is put in.

GUARDS on automatic filling-winding machine prevent trouble from excessive ballooning, which is typical of monofilament yarns. Winding supply overend is preferable to unrolling.

HIGHLIGHTS: *Local heat applications keep yarn pliable—Knots must be avoided—Trouble from resin shedding and accumulations of resin can be minimized—Proper loom timing will prevent filling cracks—Winding and weaving now generally done on automatic machines—Most fabrics calendered.*

MONOFILAMENT FABRICS of saran, polyethylene, nylon, and the coated yarns are developing spectacularly. Originally, monofilaments were woven principally for novelty fabrics and screening. At present, their greatest potential seems to be as upholstery fabric. Many industrial uses are also being found, such as for agricultural shade cloth and for industrial filter fabric. [See TW, Sept. '48, p. 112]

The technique of manufacturing monofilament fabrics is not much different from, say, rayon fabrics. Practices followed are becoming standardized, and in the following will be presented some tried and proved methods.

To produce upholstery fabric, a mill will need plenty of yarn-storage space. As production in poundage far exceeds that from usual yarns, customary methods of handling, storage, and processing are inadequate.

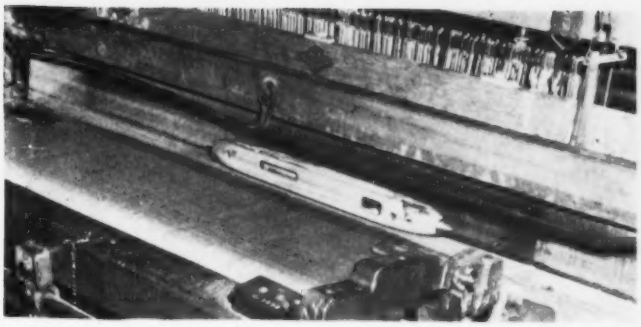
Stock must be arranged by lot numbers and color. In some instances, lot numbers that differ but have same color symbols can be used in the same warp. It is best, however, to run together only corresponding lots and colors and to use short ends as filling. When small lots of colored yarn must be used as warp, it would be best to spot such lots to run warp-wise fully across the width. Avoid banking the creel solid with one small lot, continuing on with a second small lot, and so on. Compute poundage into yardage, and spot bobbins accordingly.

Try to use up small odd lots in designs that have only a few ends of those colors. Should more small lots of yarn be left that can be used in warps, it is best to work these up as quickly as possible for filling, if at all possible. In any event, avoid piling up odds and ends in storage, as a surprising number of yarns in various colors and mils (diameters) will soon clutter all available space. Promptly discard all yarn cartons, and reship spools immediately on emptying them.

Do not leave old stock on a beamer creel, especially when the new colors and mils are closely related. Even experienced personnel will have difficulty in differentiating yarn sizes when diameters are close, such as an 0.010 and 0.012, or when colors are but slightly different.

WARPING. Warping of monofilament yarns differs according to the

Some of the illustrations shown here are courtesy of Lumite Div., Chicopee Mfg. Co., but technical material represents best practices as found in several plants.—*Editor*



NOTE DOUBLE ROW of heddles which permits more heddle movement. Wooden shuttles are preferred since less resin accumulates on them. Emery cover on take-up roll grips fabric well, minimizes barre.

LOW MACHINE, as shown, eases inspection job. During this operation, fabric can be cleaned as well as repaired.

fabric construction. On an ordinary 36-in. screen cloth of 18 warp ends per inch, there would be 648 ends per warp plus a few selvage ends, a total of 652 ends. A creel for this many ends would require 326 spindles on each side. However, this same creel can be used for narrower widths merely by cutting down on the number of bobbins creeled in.

When warps call for use of 1,000 or more bobbins, a double-length or triple-length creel can be used. There are also creels with double spindle rows on each side, one outside and one inside to permit twice the amount of bobbins on nearly the same size creel. Such a creel is illustrated.

An upholstery fabric reeded 62 in. wide in a 60-dent reed will require 3,726 ends (including selvage). This large number of ends will require a lengthy creel and considerable floor space. The cost of the floor space, however, is minor compared to the advantages of running direct from bobbins to loom beam.

The best way to tension bobbins is by using pieces of felt underneath them. The creel pictured has the bobbins mounted horizontally; however, inclined spindles are often used successfully. Yarn is best run off in warpers by revolving the bobbins rather than by pulling the yarn over end. If the warper speed is not too fast, bobbins will not track off the spindles.

Making warps for narrow fabrics on low-count constructions is not so difficult as making wider widths and high counts. An eye board can be used for narrow fabrics. Ordinary beaming tension can give sufficient warp density for weaving screenings and shading cloth. Drop-wire stop motions are customary on warpers.

TENSION. Warp tension must be increased for weaving wide fabrics, heavy yarns, high warp-count constructions, or for large-diameter beams. When great tension is needed, the yarn can be run directly through a slasher; of course, no size solution is used. On such machines, tension can be set from start to finish of the loom beam as desired. The use of a 2-cylinder cotton slasher would be practical for long runs of warps for screening fabrics or for warping heavy monofilaments.

The least trouble in the loom will come from warps that are packed solidly from flange to flange. Warp density must be positive and uniform to prevent any stretched ends from cutting into the loom beam. The need for a hard-packed warp requires the use of steel beam flanges. Thin-walled cast-iron flanges have been known to break, beam barrels to crush, and even the screw threads on steel barrels to strip due to the tension needed when warping monofilament yarns.

For wide fabrics or others requiring a large number of ends, a regular loom reed can be used in back and in front of the warper to take the place of the eye board and spacing reed. No leases are necessary, as the twisting-in department will handle monofilament warps differently from warps of other yarns.

When the loom beam is filled, it is good practice to place a strip of scotch tape beneath and directly over the yarn 2 ft. from the cut-off. This tape holds the ends in position for drawing in or (sometimes) tying in.

ENTERING. Most monofilament warps must be entered, although the finer diameters can be successfully knotted by machine. In preparing to draw in, the warp is placed back of the drawing-in frame. The taped section is placed at or slightly above the top of the harness. The extra length in front of the tape should now reach through the heddles and entered approximately 8 in. beyond the first shaft. This length will allow enough yarn for the entered ends to be tied in small bunches and to prepare for reeding.

For screening fabrics, a 2-bank set of drop-wires should suffice; on higher counts, a 4-bank or 6-bank set may be required. Electrode bars must be parted to allow movement of the drop-wires, as they are drawn. If the frames are positioned correctly, no hander-in is required.

An experienced enterer can quickly pass her hook through the desired heddle eye and drop-wire, hook the proper end, and draw it through. Thus three different tasks are accomplished by one person: entering, handing-in, and drop-wire drawing.

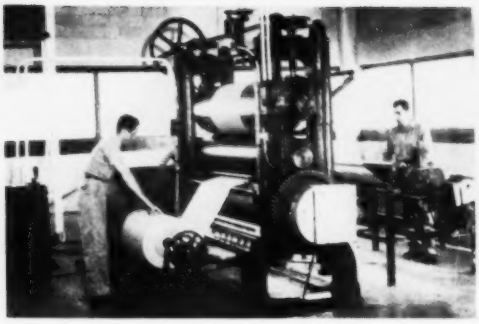
Some enterers have gained such proficiency that they can use a double-prong hook to draw two ends at once.

FABRIC TYPES. The three swatches shown as A, B, and C in the illustration represent three types of monofilament fabrics commonly produced. Swatch A is an ordinary screening cloth. Swatch B is a 3-shuttle, fancy fabric using red, blue, black, ivory, and transparent yarns. Swatch C is check that has a white filling and a black warp. Swatch A can be entered on two shafts, but some weavers prefer to use four shafts to give more heddle freedom. Two banks of drop wires, however, are sufficient.

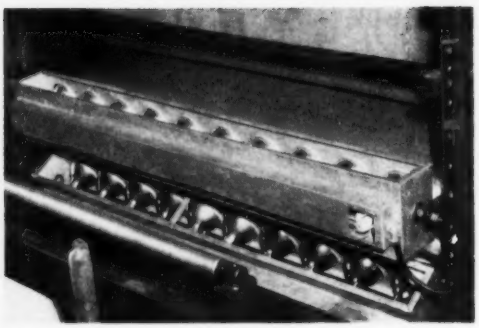
Swatch B is entered on four shafts (or two double shafts as shown in one of the illustrations) in a 2-heddle shaft entry since the fabric is a 2x2 twill. If ends were entered two ends per heddle, they would tend to roll and give an occasional twist effect that would result in open spots scattered through the fabric. A better entry would be on eight shafts having a straight draw. Four banks of drop wires should be used.

Swatch C requires 12 shafts. The weave requires entry of one end per heddle. The weave is a reverse twill that lifts 2x4 in 1-in. blocks.

Steel reed springs are best for reeding monofilament yarns. The hook sys-



CALENDERING is necessary for most monofilament fabrics. Operation smooths fabric, reduces spaces between yarns, and helps prevent yarn shifting.



INFRA-RED LIGHTS can be used to heat fabrics during calendering. Heat lamps are also used at the loom to soften filling yarn, for subsequent flattening action.

tem can be used but requires two operators; one for picking out the end and placing it on the hook, the second for shoving the hook through the reed dent and drawing through. Using a steel reed-spring hook and keeping the yarn as short as possible permit a single operator to reed the warp.

MOUNTING. When being placed in the loom, the beam is lifted into position, usually by making use of a lift truck. The harness is then swung over the crankshaft and temporarily hooked up. The truck is removed, and beam caps are placed on the beam spindles. The reed goes into the reed bed, and yarn is pulled up slightly for lacing into the loom.

After lacing, drop-wire brackets are unfastened and electrodes with drop-wires moved back into position. Drop brackets can now be secured, and carrier brackets removed from the harness. Check over the shaft hooks to align them properly. Hooks out of place may cause chafing, resin accumulations, damage to the reed, and warpwise streaks.

On Draper looms, some fixers prefer to hook the jack hooks underneath first, and then connect the harness straps. Still other fixers lower the straps slightly with harnesses hooked and then connect the jack hooks. Regardless of method used, apply tension to the warp after it is properly hooked up, and turn the lay to back center. Adjust the shaft on the bottom shed to permit the warp yarn to ride the race slightly. Turn the lay over one pick, and adjust the opposite shed which has now been brought down to the bottom.

Turn the loom handwheel until the lay is timed with both sheds equal, and tighten the straps until the cams are touched by the treadle rolls. The rolls must ride the cams at all times.

Early timing is about 2¼ in. from front center with all moving shafts equalized. If shafts are even at front center, the timing is late. On monofilament yarns, the preferred setting is about 1¾ in. before front center.

Slow speeds, of course, require later timing of the shedding cams; and it may be necessary to set the harnesses level with the reed about ½ to 1 in. from the fell of the cloth. Since weave room conditions vary, a few test runs may be needed to establish the best timing.

FANCY WEAVES. On C&K looms with dobbies, it is best to time shedding so all harnesses are equalized with the reed ½ in. from the fell of the cloth. For fine yarns, the timing can even be within ¼ in. Setting the closing before the fell prevents widthwise cracks that are common with stiff yarns.

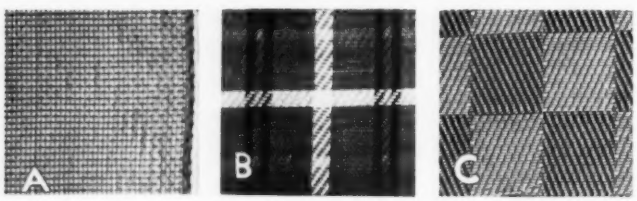
Starting monofilament-yarn warps on C&K looms is similar to mounting warps of other yarns except that shedding is timed early by ¼ to ½ in. Harnesses are first fastened to the shaft hooks; and, after lacing-in, the bottom springs are hooked underneath the shafts. Two springs to each hook will give a more positive pull-down when beams are running low and may prevent the fabric ballooning up in the center during weaving.

Originally, much monofilament screening was woven on hand-change looms. Today, better filling cutters on looms and use of finer-diameter yarns have aided the change to automatic looms. For monofilament fabrics on automatic looms, the weaver load varies from 5 to 20 looms, depending on the construction and the weave-room conditions.

For the loom take-up drums, emery cloth eliminates slippage and loose or tight marks. Avoid perforated metal, cork, or rubber coverings. Perforated metal covering cuts the yarns, and rubber fails to grip the glazed yarn sufficiently to prevent shifting and barré marks.

A wooden shuttle is preferred for weaving monofilaments. If resin accumulates on the bottom of the shuttle, weavers can scrape it off and continue without flagging the fixer. Fiber-clad shuttles are not satisfactory,

THREE TYPES OF MONOFILAMENT FABRICS



SCREENING, swatch A, shown has excellent edge, accomplished by 2-up and 2-down weave.

PLAID, swatch B, needed three shuttles. Weave is 2x2 twill. Final calendering was very heavy.

BLOCK PATTERN, swatch C, is one-shuttle job achieved in 12 shafts (white filling, black warp). This sample was taken directly from loom; calendering will greatly improve appearance.

as resin "burns" into the fiber rather quickly, and large lumps have a tendency to cause warp-yarn breaks.

FILLING TENSION. Filling yarns should be tensioned sufficiently to give a slight drag, but too strong a drag will cut out the few ends used as selvages. Some screening fabrics can be woven with a neater edge if a pull-out wire is used.

If filling tension can be controlled satisfactorily, the edges can be composed of doubled ends for two or three dents. One shuttle manufacturer has a special monofilament tension that is positive and can be controlled from start to finish of the bobbin.

Shedding can be higher above the shuttle than is general for other fabrics. This setting will bring the high shed about ⅜ in. above the shuttle with lay at back center.

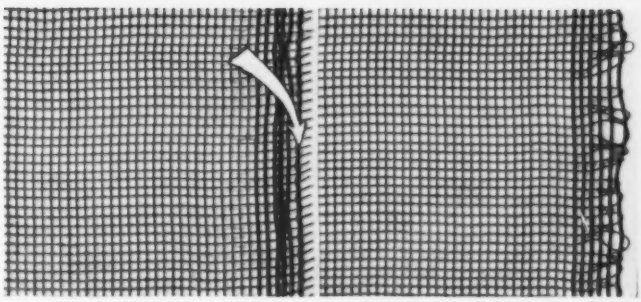
Pile race-plate covering is preferred and avoids the usual shuttle marks caused when the shuttle strikes downward coming from the box or has a wobbly flight. These marks show as lighter streaks and, in most instances, will show in the piece after it has been calendered. Suitable race-plate covering avoids the streaks; and if resin dusting is rather heavy, the resin will sift down into the pile. A cloth saturated with a cleaning solvent can be used to clean out the resin as warps are changed. If the covering is worn badly or contains heavy resin deposits that resist cleaning, a new cover should be put on.

Most monofilament fabrics require good temple rolls. A pin roll may damage the fabric, so it is best to use rubber rolls or a combination of pins and rubber. When rolls wear down and fail to hold satisfactorily, they should be replaced immediately.

FILLING WINDING. Winding filling bobbins has improved greatly and is now usually done on automatic machines. Supply bobbins in the creel are not magazined. Each new package is started without tying knots.

Run the yarn overend; do not unroll. Monofilament yarn balloons freely, and guards must be used to prevent one strand from whipping into an adjoining strand.

When a supply package is empty, if the quill is over half filled, remove the quill and start an empty one. If less than half full, it is best merely to wrap on a new yarn without knotting and to resume filling the quill. When weaving such quills, the filling motion will stop the loom at the loose end. Stopping the loom is better than having stretched edges or small smashes along the sides, such as occur if a knot sticks in the shuttle tension.



WIDE LOOMS can be used to weave two widths of fabrics at once. Center selvage (arrow) has leno weave. Knife on loom cuts fabric. Regular selvage at right could be improved by (1) more filling tension or (2) heating yarn during weaving.

There are many factors that slow up filling winding; often additional help is required. One of the most trying operations is the running of "skinnies" left over from beaming. Utmost care should be used to avoid knots both in beaming and quilling. The use of partly emptied warp bobbins as a filling supply avoids considerable waste. "Skinny bobbins" should be confined to one or two machines if possible, and an adequate amount of help assigned to keep "skinnies" run up.

BATTERY HANDS. When looms are running one-color filling, battery hands can take a supply of filling bobbins from one loom to another, using a suitable truck. The loom load must be lightened, as bobbins of coarse monofilament yarns run out quickly. A possible load on screening fabrics would be around 40 looms.

Multiple-shuttle work can sometimes be handled from a boxed filling supply, or from boards containing the various colors. Most often, boards are mounted on looms by one person, while the magazines are filled by a second. Magazine filling must be done with care. A color mix in any of the cells will result in a second. For some designs, a color mix ruins the pattern entirely.

Loom production can exceed 100 yd. per day on many screening fabrics. It generally is desirable to run nearly that length before cutting off the piece. The best plan would be to use a yardage meter.

CLOTH ROOM. Heavy monofilament fabrics need to be hand picked so that minor imperfections such as an occasional hang-pick or a small float can be repaired. Drag-ins can be pulled out, and open spaces scratched together. Even a broken pick and double pick can be somewhat shaded off so that they do not look too bad. To repair these defects, the extra strand is cut into short lengths and pulled free. Appearance of the crack is then improved by scratching picks together. In making corrections, the yarn can be saturated with a solvent to make it pliable and to prevent a roughened appearance after corrections have been made.

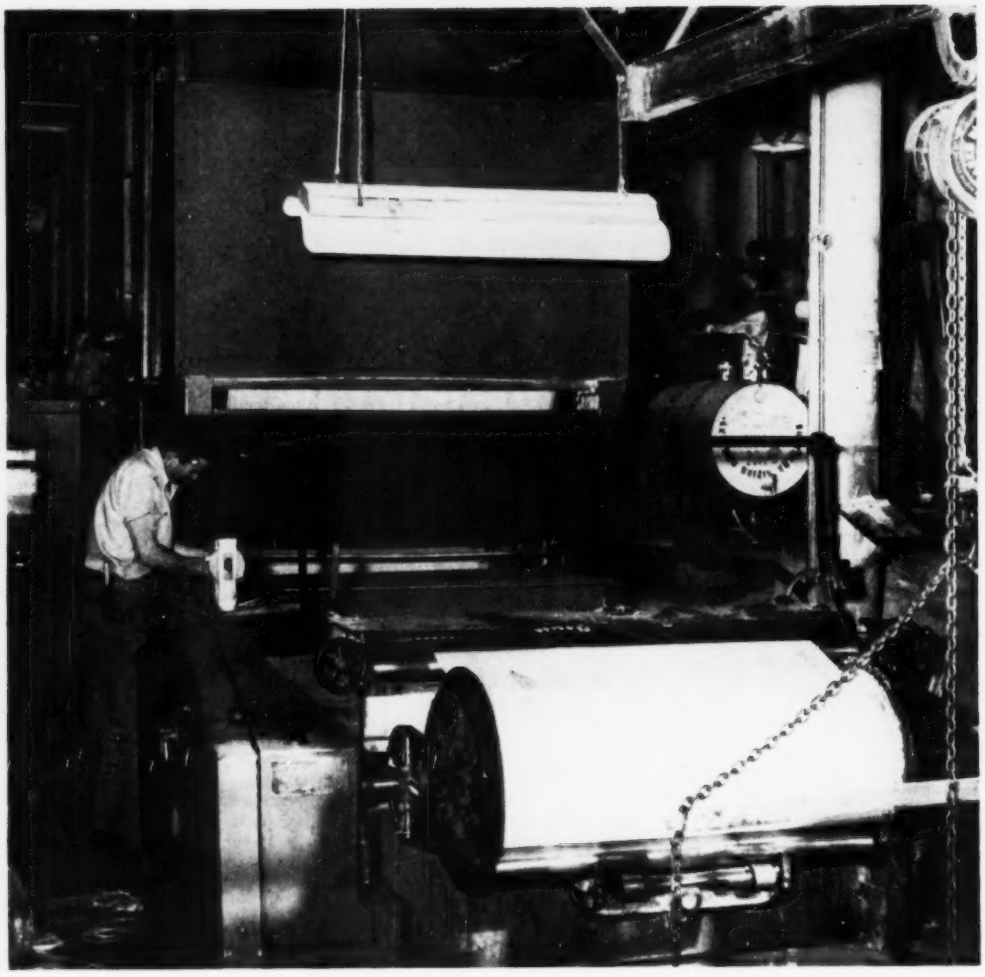
Oil and grease is often spattered on yarns and the woven cloth. Suitable cleaning solvents can be put on a wiping cloth, and such contamination can be cleaned without damage. It is best to place a large blotter beneath the fabric and wipe from top in one direction only. White gasoline can be used successfully to clean grease.

CALENDERING. Most monofilament fabrics are run through a calender to smooth out the weave and to flatten the yarn. Some monofilament cloths made from finer yarns are used for special purposes and are left uncalendered. Most weaves, however, are calendered to set the strands and prevent shifting, if for no other reason.

Swatch B shows the effects of calendering; the yarn is spread out and the minute spaces formed by the reed wires are closed. Infrared heat is used to make the fabric pliable.

Heat in all stages of processing monofilaments will prevent waste and damage. An infrared lamp placed above the quiller supply package will soften the yarn during winding and will result in a neater quill. Supply packages should be kept heated until used. Heat, however, should be light to prevent scorching.

At looms, an infrared lamp or large incandescent lamp placed behind the battery will heat the filling sufficiently to make a smoother fabric possible. Again, the heat should be low enough to prevent scorching. After the transfer, the quill is used up rapidly enough to prevent detrimental loss of heat. On heavy yarns, the more pliable the filling can be kept, the easier it can be woven and the better will be the quality of the cloth.

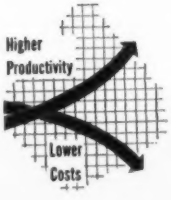


THE DRYING AREA is inclosed by copper sheets fastened to steel framework. Openings at critical points permit inspection and access for maintenance work.

FOUR-CYLINDER SLASHERS
Up Pepperell Production

HIGHLIGHTS: *Four 5-ft. cylinders operate at 95 yd. per min., dry 1,000 lb. of yarn per hr.—Drying area is inclosed—Magazine creel saves 30 to 40 min. at each run out.*

By R. B. HORSLEY
Manager Mill Dept.
Pepperell Mfg. Co., Opelika Div.



TWO HIGH-SPEED, four-cylinder, inclosed slashers are now doing the work of six of the older-type open machines, with plenty of spare capacity, at Pepperell Mfg. Co., Opelika, Ala. Up to 1,000 lb. of yarn per hr., depending on the yarn count and the size formula, can be dried.

At present, yarn numbers range

from 12½s to 32s. The number of ends per warp ranges from 3,160 for the coarser counts to 4,298 for the 32s yarn. The size formula calls for 16 oz. of starch per gal. Top running speed is 95 yd. per min.

On a three-cylinder conventional-type slasher not equipped with an inclosed drying area and variable-speed drive, 600 lb. of yarn per hr. is dried. The running speed is approximately 55 yd. per min.

The new slashers, installed by West Point Foundry & Machine Co., are equipped with four 5-ft. cylinders of heavy copper shell construction. Each cylinder is carried on a ball-bearing shaft with rotary-pressure joints. Ball bearings are used throughout the slasher to prevent vibration at all desired speeds and to reduce maintenance. Cylinders operate under 30-lb. steam pressure, reduced from 125 lb. at the boilers. The yarn comes in contact first with the cylinder having the lowest temperature and proceeds successively to the hottest, where drying is completed.

CONDENSATE. Condensate is removed in the conventional manner but with improved buckets and joints. Leaking has been eliminated. Brass or stainless-steel piping is used for the size box, and steel pipe is used for steam connections.

The slasher is inclosed on each side and at the top, from the size box to the front cylinder, with sheet copper fastened to steel framework. A 30-in.-diameter exhaust duct removes moist air at the top front of the inclosure. Inside the inclosure, the main flow of air is from the open bottom, around and through the warp sheet, largely eliminating the blanket of moist air that usually hovers over the drying area of a steam cylinder.

The inclosure conserves heat and increases production of the machine by adequate removal of moist air.

Openings in the sheet copper at the front and sides permit inspection of the warp sheet and give access for necessary maintenance.

The size box is equipped with a 10-in. ribbed-brass immersion roll. Squeeze rolls are yarn-wound. On one machine, the squeeze rolls are raised and set at desired pressure by a manually operated mechanism. A later-designed, pneumatic loading-and-lifting device probably will be installed.

MULTIMOTOR DRIVE. The slashers were originally equipped with Transitorq drives. One of these has been replaced with a multimotor drive consisting of an a.c.-d.c. motor generator set and two d.c. motors, one to drive the warp beam and one to drive the delivery roll. The size box and stretch-control unit are driven by a side shaft from the delivery roll.

The stretch-control unit draws the yarn from the creel and feeds it into the size box. By a varying speed of this unit with relation to the delivery roll, the stretch between these two points is controlled. The amount of tension with which the yarn is wound onto the loom beam is controlled by the multimotor drive.

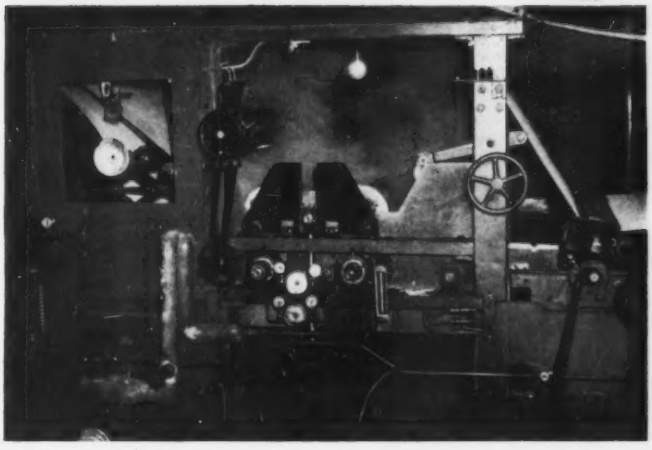
A worth-while saving of usual machine down time is made by the use of a magazine creel for section beams. From 30 to 40 min. is saved every time a creel is changed.

The section-beam creel is built as a unit and is mounted on wheels. Metal tracks for these wheels to run on are laid on the floor crosswise to the back of the slasher.

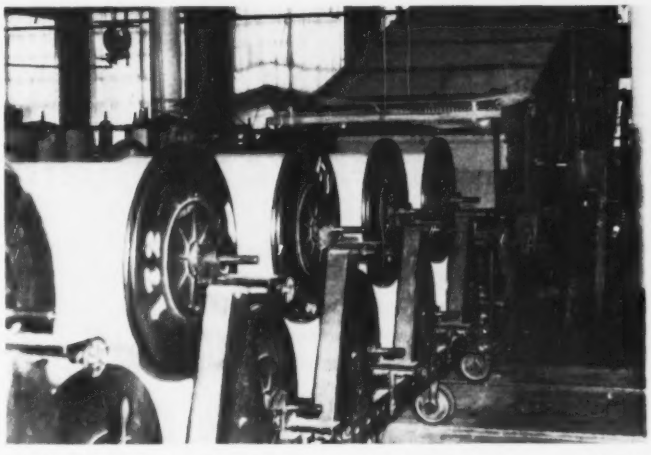
The magazine creel requires more floor space than a conventional creel, but Pepperell is of the opinion that the extra production it makes possible amply justifies the use of the extra space.

Regain is controlled by means of the Brown Moist-O-Graph controller.

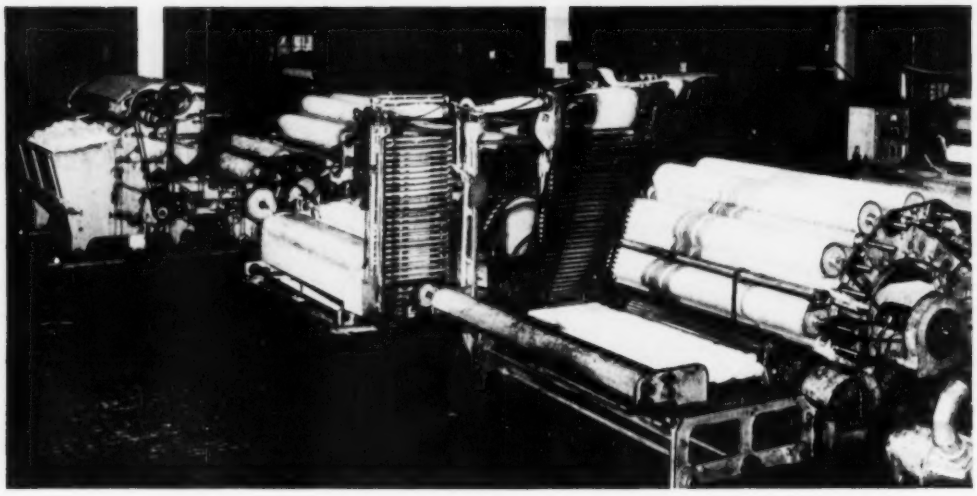
A permanent record is kept of every set. With this instrument, the percentage of regain can be set at almost any desired point and the instrument will vary the speed of the slasher to maintain the desired percentage of regain.



STEAM from the size box and moist air from the cylinders are removed from the inclosure and exhausted through a duct.



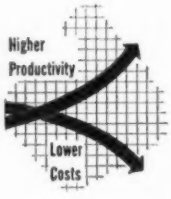
THE CREEL is mounted on wheels that run on tracks. A new set can be prepared for the slasher while another set is running.



THREE CYLINDERS of Forstmann's new card are arranged side by side. Feed can be seen in background near first cylinder.

NEW WOOLEN CARD
Raises Forstmann Production

HIGHLIGHTS: *80-in. card built by Newport News Shipbuilding & Drydock Co. produces 200 good ends—Cylinder speed at Forstmann is 128 rpm.—Cylinder and doffer have same diameter—Cylinders arranged side by side instead of lengthwise to card fibers in every direction.*



By GUSTAV ZELLNIK
Consulting Editor, TEXTILE WORLD

A NEW 80-IN. WOOLEN CARD at the Garfield plant, Forstmann Woolen Co., Passaic, N. J., is producing at a rate about 40% higher than other cards of the same width. The card is the first produced by Newport News Shipbuilding & Drydock Co., Newport News, Va., and features a 128-rpm. cylinder speed, cylinders and doffers of 48¾-in. diameter, and an interchangeable-type tape condenser.

Forstmann Woolen Co. has always used cards wider than the 60-in. standard for the industry. The Forstmann company had certain ideas it wanted built into a card. Objective was to get first quality at the lowest possible price. The Newport News Shipbuilding and Dry Dock Co., Newport News, Va., undertook to build such a card with the assistance of Forstmann experts. Forstmann delivered a dismantled card to Newport News, and the final result was the machine now running.

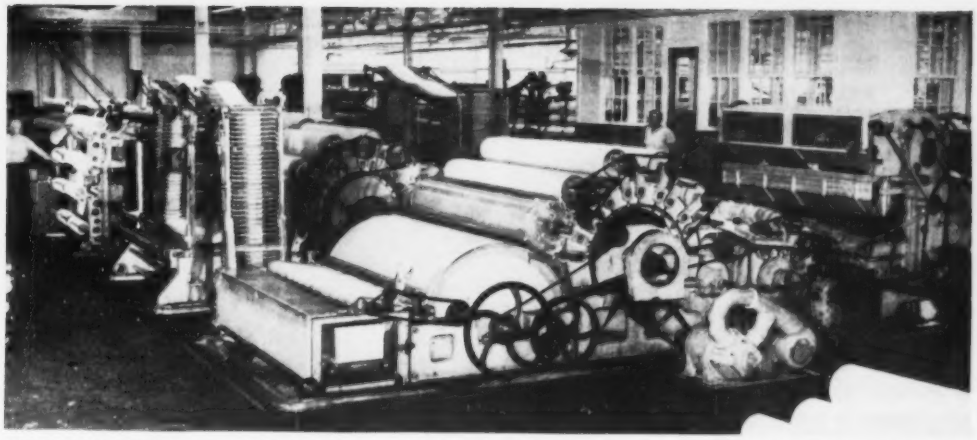
The basic construction is a 80-in.-wide card with a tape condenser of 200 good ends for fine yarns and of 144 good ends for coarse counts. Of course, the tape condenser can be built with any number of ends required for the individual use of a woolen mill.

The card is constructed along the principles of continental-type machines combined with new ideas developed by close collaboration of shipyard engineers and the experts of the Forstmann Woolen Co.

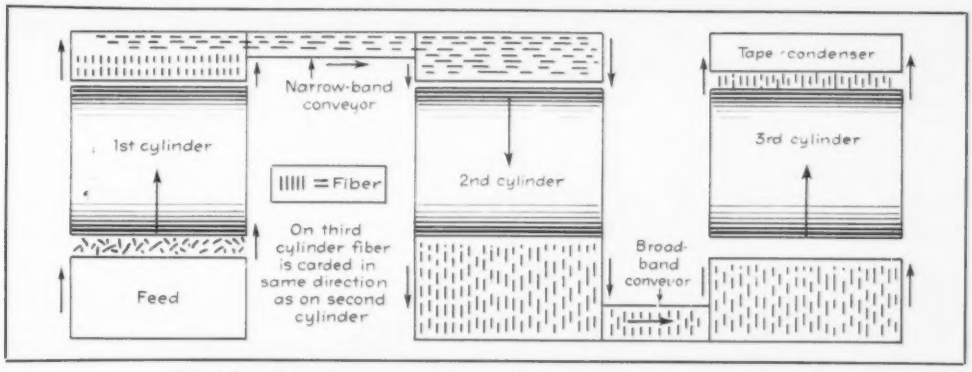
The basic purpose is to open and card the wool in both directions, carding the fiber lengthwise and crosswise. Therefore, each cylinder is considered as a separate unit. To synchronize the uninterrupted process, a narrow-band-conveyor takes the fiber from the first to the second cylinder, and a broad-band-conveyor transports the web from the second to the third cylinder.

The card has an automatic feed complete with feed apron arranged to be driven by the metallic breast unit. All parts are arranged to operate mechanically in synchronism. The weighing mechanism is very simple but of high precision. A control lever is provided for changing the length of the stroke of the apron comb. To permit observation of the feeding process from a distance, the cover above the weighing pan is made of Plexiglas. This cover also prevents fly from entering the weighing pan. A wide range of change gearing is provided for the spiked-apron drive.

The metallic breast consists of two feed rolls, one clearer roll, one lickerin, one lumproll, and a cylinder with three workers and strippers. Size of the cylinder will vary with individual-mill requirements. The feed rolls are driven from the lickerin through a special installation permitting a wide-range variable-speed control of the feed while the machine is in opera-

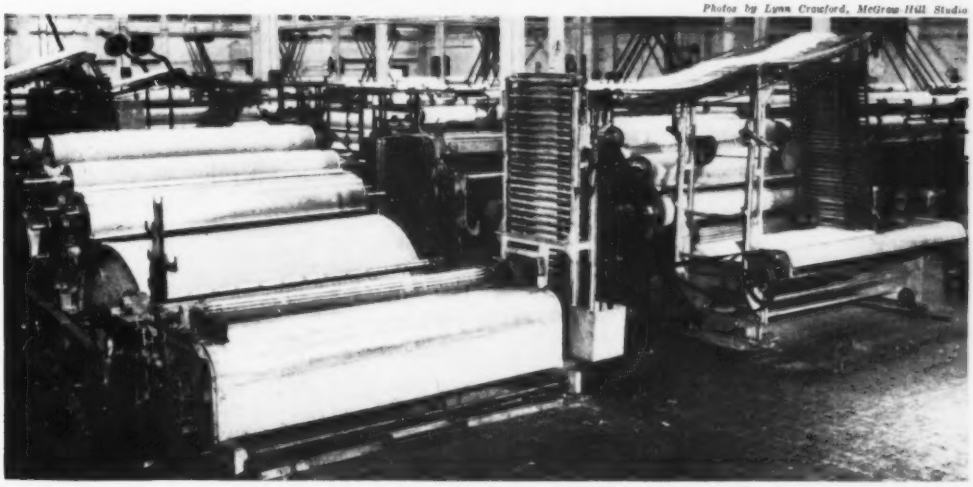


VARIABLE-SPEED DRIVE is connected to individual motor driving each cylinder. Fan keeps motor cool. Note large doffer sunk into floor.



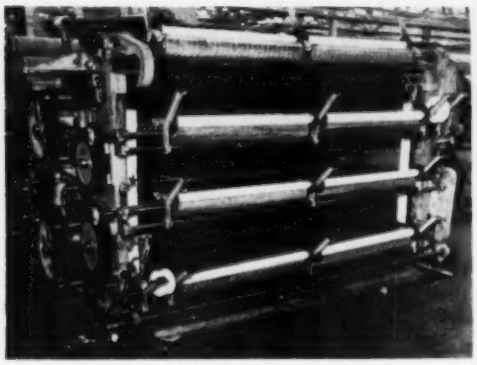
FIBER IS CARDED in every direction as shown in this diagrammatic sketch of the card layout.

Photos by Lynn Crawford, McGraw-Hill Studio

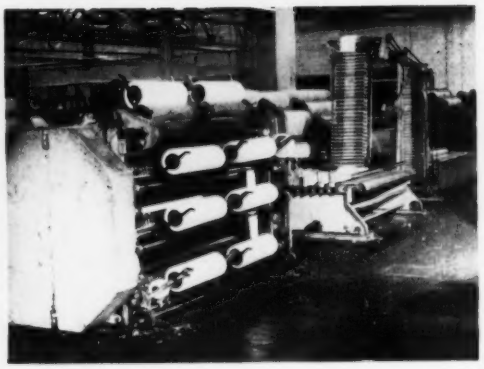


WEB IS CONVEYED by broad-band feed from second to third cylinder.

NUMBER OF ENDS PRODUCED MAY BE VARIED



CONDENSER WITH 200 GOOD ENDS *can be changed by replacing rolls and roving-guide bars to produce . . . .*



144 **GOOD ENDS.** *Extra sets of rolls are furnished with the card to produce proper number of ends for fine, medium, or heavy counts.*

tion. Burr-remover attachments are located below the first and second stripper. The burr knives are fitted under the lickerin.

LARGE DOFFER. The three cylinders are 48¼ in. in diameter, and the three doffers are of equal size. The first cylinder has one small worker, four normal-size workers, and four strippers. All other cylinders have five workers and five strippers. The fancy on all three cylinders is equipped with an upper and lower stripper. The fancy is entirely inclosed.

The construction of the condenser is similar to the deep-groove tape condenser, but the design and arrangement of the rolls has been changed, resulting in an improvement over the conventional deep-groove condenser. Shallow-groove and plain rolls are provided to guide and drive the tapes properly. The arrangement is such that endless tapes, having a half twist, return through the grooves of the dividing rolls. Polished scavenger rolls and felt-covered clearer rolls are provided to remove lint. The roving divided by the tapes enters a single rubapron condenser. Means for tensioning the aprons are provided. The aprons are followed by eight wooden-surface drums, two drums to each bank.

The card is generally of iron and steel construction. If desired, workers, strippers, and fancy can be made from aluminum or light metal. Some sections of the card as the feedbox, narrow- and broad-band conveyor, and tape condenser are mounted on wheels which roll on the foundation rails.

A special feature of the card is the unusually large doffer. Many years of research have proved that a large doffer makes possible an increase of production on a card. Continental card builders found out this fact more than two decades ago and gradually enlarged the diameter of the doffer on all carding machines they were constructing. Of course, a larger doffer requires that this part of the card be partially below the floor level of the card room [TW, July '48, p. 104], or have walkways around the cylinder at a slight elevation above the floor to assist the stripping crew.

CONVEYORS. The three cylinders of the card are laid out side by side and not lengthwise. Conveyors transport the web from one cylinder to the other as can be seen in the pictures and sketch. (If desired, the card can be installed with the cylinders in tandem.)

The first conveyor, a narrow-band feed, is arranged with a lattice to receive the web from the breaker doffer and transfer it directly to the canal conveyor as a straight fiber band. The canal is inclosed to keep out drafts. The feed for the intermediate card is arranged to receive the fiber band from the cross-over lattice in such a way that the direction of the fiber is changed and to distribute the fiber band in even layers on the feed table. The first intermediate feed may be considered as a blending device. This mechanism has numerous adjustments permitting the operator to choose the angle of lay of the fibers with relation to the feed rolls.

The delivery table is arranged with a lattice to receive the web from the intermediate doffer and to transfer it to the canal conveyor. Polished rollers are provided on the table to fold the web as it passes to the canal, thus producing a folded band of fibers maintaining the direction in which they come off the intermediate doffer. The canal is inclosed to minimize drafts. A belt drive from the card is connected through change gears and other gears and chains to operate the canal, up-take, cross-over, horizontal, and down-coming lattice. The feed for the finisher card is arranged to receive the fiber band from the lattices and distribute it in even layers. A chain-driven press roll is fitted over this lattice.

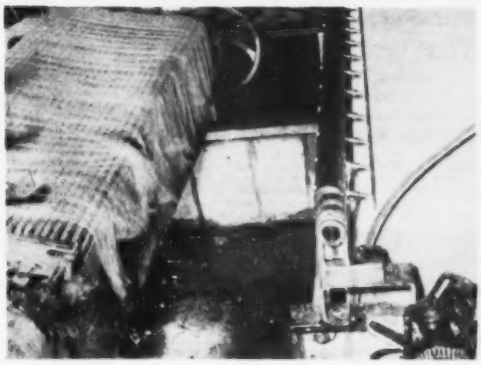
The entire arrangement of the two

What Forstmann Thinks of the Card

According to a spokesman for the Forstmann Woolen Co., it can be said:

1. **Comparatively speaking, the production on the new woolen card is about 40% higher than on other cards of the same width but having a smaller doffer.**
2. **In some cases a greater increase in production is obtained. The evenness of the roving is beyond any criticism.**
3. **Stripping is considerably reduced. The card has a 3 to 4 times longer interval in the stripping schedule than have other cards with a smaller doffer.**
4. **The first card built by the Newport News Shipbuilding & Dry Dock Co. is considered by Forstmann Woolen Co. as a success not only from the viewpoint of construction but as a reliable production unit turning out a yarn of highest standards.**

DOFFER RUNS IN FLOOR PIT



PIT 2 FT. DEEP permits large-diameter doffer to run below floor level. Lowering of doffer permits low over-all machine height.

SOME FORSTMANN MEN who helped in card development are (left to right) Sam Lubarsky, Edward Kurtz, Dan Balogh, and John Mueller.

conveyors permits the stock to get a carding in every direction, an advantage which can be appreciated only if one wants to have the web as clear as possible before it enters the tape condenser.

Another feature is the narrow distance between the doffer comb and the entrance of the web to the division rolls of the tape condenser, thus eliminating the need of a supporter roll.

DRIVE. One three-phase, 550-v., wound-rotor motor is provided for each of the three sections. The three motors are connected through a common, separately mounted, motor-operated rheostat so that their revolutions are synchronized. Necessary control devices are assembled in a cabinet and connected so that the motors will start, accelerate, decelerate, and stop in synchronism. Card speeds between 80 and 140 rpm. can be selected by the operator by manipulating the "raise-lower" control handle on the control cabinet. Operation of the "stop" button on the control cabinet will cause the three units of the card to decelerate and stop in synchronism. An "emergency stop" button is also provided.

Reverse motion for grinding is obtainable, either for a single section or any combination of the three sections, by operating the proper switches in the control cabinet.

An electric tachometer having an index pointer is mounted on the control cabinet. The tachometer shows the speed of the finisher cylinder. Each main motor is fitted with a ventilating fan connected to run whenever the main motor is operating. The drive of the doffer is by belt and gear from the main cylinder. Workers are chain driven.

Another interesting construction detail is the annealing, during construction, of the tubular-steel parts. After the cylinder or the other various rolls have been welded, the cylinders, doffers, etc. are put into annealing ovens at the proper temperature and all welding and fabricating stresses are permanently removed, making the cylinder, doffers, etc. permanently stable.

The new card at the Forstmann woolen mill has been running at a cylinder speed of about 128 rpm. Despite the higher speed, a first-quality roving is being produced. Of course, the high speed of the main cylinder is possible only because of running the fiber length-wise and crosswise, thus giving the fibers a thorough carding from every angle and from every direction. In spite of the high speed of the main cylinder, the doffer was run at about 3 to 3½ rpm.

CYLINDER SPEED. Many carders overlook the fact that a higher speed of the cylinder can sometimes help to give the wool a better carding. The idea that a higher cylinder speed would spoil the quality of the roving is contradicted in this case because Forstmann is well-known all over the country as a manufacturer of high-quality woolen fabrics. It should be emphasized that only "sometimes" a higher cylinder speed can help to improve the carding process. The writer does not want this statement to be misunderstood and taken as a general rule for carding any kind of material. Only experimentation can give every carder positive assurance about where and when a higher cylinder speed will better the quality of the roving. It is up to the individual carder to judge what is good in deciding the proper speed. Only experimenting will bring the results as achieved by Forstmann Woolen. Of course, in many mills, especially in those where a change of the cylinder speed involves a lot of work, experimentation cannot be done. But if a mill has variable-speed motors, such changes can be made, even without stopping the card.

The speed range on all adjustment points has been vastly increased on

(Continued on page 151)

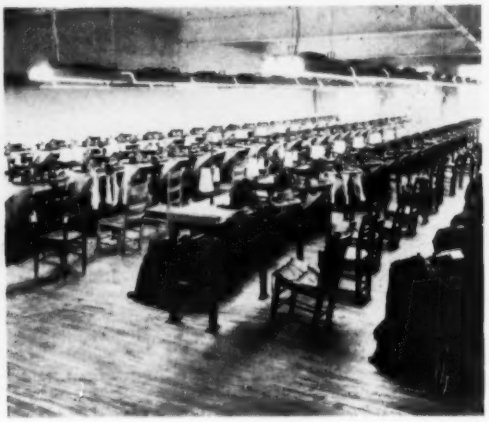
Author Is Proponent of Large Cards

The author, Gustav Zellnik, TEXTILE WORLD consulting editor for woolen-yarn manufacturing, has long been a proponent of adoption of wider woolen cards with larger-diameter doffers. In the November, 1945, issue he called attention to the fact that wider cards were producing roving of a quality equal to that made on 60-in. cards. Wider cards permit more good ends, and a larger doffer is beneficial for higher production. In 1941, he made a layout for a 60x60-in. card installation which had doffers of 42-in. diameter. In that installation, 48-in. doffers were desired; but because the mill card room was on the second floor, a pit could not be dug to house the doffer. The 1941 installation was the first in the U. S. in which a 42-in. doffer was used throughout.

ACCURACY IN LOOPING is made possible for Virginia Vuncannon of Melrose Hosiery Mills, Inc., because she has . . .

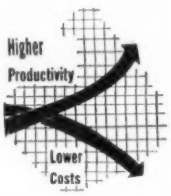
. . . Scientific looper training from studies made by her employers, coupled with expert looper suggestions compiled by experienced operators and . . .

. . . Modern equipment in a new looper room.



Half-Hose Mill Gets Facts on LOOPING

HIGHLIGHTS: *Melrose Hosiery Mills, Inc., finds that new looper operators reach 38 doz. per day in 24 weeks—New operators level off between 8th and 12th week at 23 to 26 doz.—Mill compiles practical suggestions from experienced operators.*



By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

HALF-HOSE-LOOPER OPERATORS at Melrose Hosiery Mills, Inc., High Point, N. C., know all the facts about looping. They know because their management has made a detailed study of looping over the past years, accumulating practical suggestions from looper operators and developing a unique chart and guide called "Learning to Loop." The suggestions and chart reprinted in full at the right were compiled by Claude Blackwell, foreman of looping and inspecting, and J. D. Boyd, director of *The Mel-Rose-Glen*, plant newspaper*.

During the expansion of the Melrose mills, all knitting machines were moved into a new and separate knitting unit. The floor areas freed by this change were remodelled for a large and modern looping department. In keeping with the company's desire to provide every facility for employees, the new looping department has many modern conveniences: functional painting, with six different colors on walls and an eye-restful green on the wall faced by the operators; overhead flourescent lights; non-glare-treated windows.

New American Safety tables were installed. Cushions were supplied operators who work at 18,22, and 30-point Sotco steady-dial looper machines. The rest room for operators is well equipped and large. Mirrors and coat-hanging space are provided in them for employee convenience.

* Looper curve and instruction reprinted in Industrial Psychology, by Dr. Joseph Tiffin, Purdue University, published by Prentice-Hall, New York, N. Y.

PRACTICAL SUGGESTIONS

Establish friendly, congenial relations with instructor and fellow workers. Everyone wants to help you succeed. Do not try to learn too fast. Learn a little at a time.

WHAT TO DO

1. **POSITION.** Try to relax. Some loopers urge that you sit erect, feet on floor with ankles crossed. Adjust chair to machine so that eyes meet points evenly.

2. **HOLDING THE WORK.** Hold loosely with thumb and index fingers of both hands. Some say use as many fingers as possible in order to hold lots of stitches in line. Stitches may be pushed on with opposite fingers. The thumb is most important.

3. **LEARN THE STITCH FIRST.** Learn to put on stitches while machine is operating very slowly.

4. **TURNING CORNER.** Be sure to turn the first corner right, and the last will be okay. Put on about one third of sock, then turn corner by slipping stitches off with thumb and finger until directly in corner, then put top stitch over bottom stitch. When corner has been turned, continue to put on first side, then finish back side until complete sock is looped.

5. **KEEP YOUR MIND** on your work.

6. **SEE HOW FAST** you can pick up a sock after one sock is finished.

7. **AFTER LEARNING,** time yourself occasionally by dozens.

8. **FORM THE HABIT,** from the beginning, of inspecting your own work; at least two socks out of each dozen looped.

SOME DONT'S

Don't force work on, let it slip on "naturally."

Don't pull up or down, just be sure work is on the looping machine points "good."

Don't hold work tightly; this tires hands.

Don't worry about how many dozens you should make; just keep at it. Some say don't change hands when you turn corners.

Don't put the right hand underneath the looper; this is a waste of time. (Applies to right-hand loopers.)

Don't try to hurry; make speed by working steadily. Try to again some each day.

Gossip, bad feelings, emotional upsets interfere with production. Insofar as possible, everyone at Melrose wants good, congenial working conditions in the shop.

LEARNING TO LOOP

Accept suggestions from instructor; feel free to confer with your foreman. Assume that you are a learner until the end of the full period of six months (960 hr.); especially during the last half of period, try to correct faulty position, bad habits, unnecessary random movements, etc.

Below is a "looper curve" made from actual experiences of learners in Melrose. Sometime after the 8th week (it may happen as late as 12th week.) you will reach a "plateau," or leveling off period. This is to be expected. This period is very important, even though you do not gain dozens as fast as before.

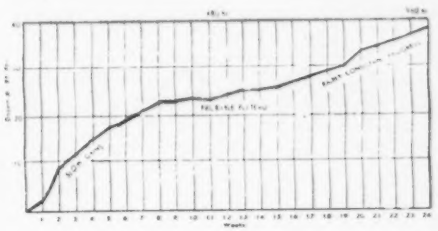
There should be no absence from work during this time especially. Lost time during any part of learning period delays progress.

Normally this plateau should not last longer than four weeks. You will find that when you start to leave the plateau you will probably make greater progress than before you reached plateau. Try to make a dozen more today than yesterday. Hold yourself to a goal.

If work changes during learning period, you may lose dozens; do not become discouraged. Also some days you will make more than other days; the number of dozens will change slightly, but the general trend will be upward.

Do not let "making the code" be your goal; a good operator will greatly exceed the "code."

On 30-pt. hose, learning will be slower during early weeks; the plateau will come later; final dozens will be less. Confer with your foreman.

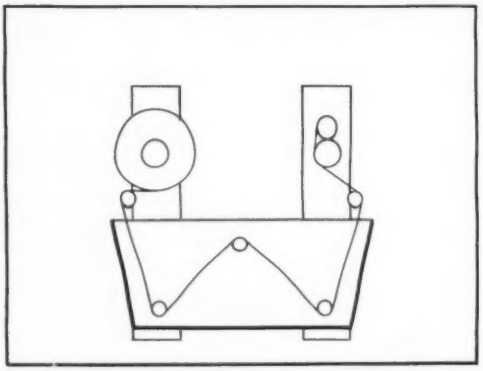


28th National Convention of AATCC Meets Oct. 13 to 15 at Atlantic City

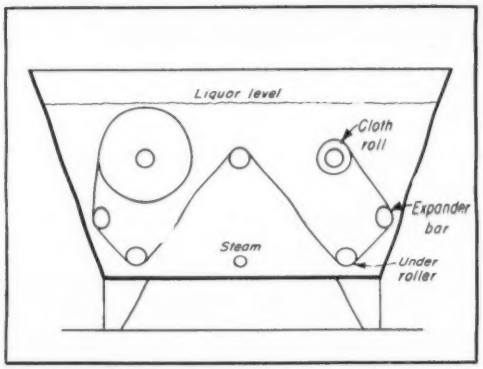
THE MIDDLE of this month, Oct. 13 to 15, the American Assn. of Textile Chemists and Colorists is holding its 28th annual convention at Chalfonte-Haddon Hall, Atlantic City, N. J. Dyers, bleachers, and finishers from all over the country, and some from foreign fields, will be on hand in one capacity or another; as will be textile suppliers, educators, and publishers.

Hand-in-hand with the general meetings of the AATCC will be the annual exhibit of products and services available to the wet-processing branch of the textile industry. The following firms and educational institutions are among those who have reserved exhibit space and who will have representatives on hand during the three days of the meeting:

Organization	Booth No.
Alco Oil & Chemical Corp.	7
Allied Chemical & Dye Corp.	8 and 9
Althouse Chemical Co.	29
Amalgamated Chemicals Corp.	45
American Aniline Products, Inc.	43
American Cyanamid Co.	52 and 55
AATCC	63 to 69
American Dyestuff Reporter	35
American Viscose Corp.	49
Atlas Electric Devices Co.	70
Blumenthal, Sidney, Co., Shelton Looms	47
Butterworth, H. W., & Sons Co.	3 and 4
Calco Chemical Div., American Cyanamid Co.	52 and 55
Calgon, Inc.	17
Campbell, John, & Co.	36
Ciba Co.	1
du Pont, E. I., de Nemours & Co., Inc.	5 and 6
Fairchild Publications	12
Fashion Institute of Technology	56
Geigy Co.	13
General Dyestuff Corp.	18
General Electric Co.	34
Hart-Moisture-Meters	41
Houghton, E. F., & Co.	51
Institute of Textile Technology	57
Instrument Development Laboratories, Inc.	53
Lowell Textile Institute	58
Macbeth Corp.	54
Miller Motor Co.	31 and 33
Monsanto Chemical Co.	28
National Aniline Div., Allied Chemical & Dye Corp.	8 and 9
National Milling & Chemical Co.	32
New Bedford Textile Institute	60
Philadelphia Textile Institute	59
Reliance Electric & Engineering Co.	10 and 11
Richards, Ellen H., Institute	61
Rohm & Haas Co.	40
Sandoz Chemical Works, Inc.	42
Scholler Brothers, Inc.	39
Smith, Drum & Co.	14 and 15
Swift & Co.	2
Textile Bag & Specialties Co.	16
TEXTILE WORLD	37
Thomas, Arthur H., Co.	38
U. S. Army & Navy	19 to 27
Venango Engineering Co.	46
Virginia Smelting Co.	48 and 50
Wolf, Jacques, & Co.	44



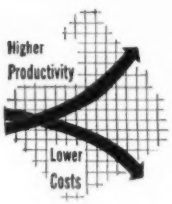
OPEN JIG in which rolls are mounted on beams out of the dye liquor. Dyeing is carried on as open-width goods pass back and forth from one beam to the other.



UNDERWATER JIG in which the cloth roll remains submerged in the dyebath during dyeing time. Oxidation of dye on the cloth is prevented, but large liquor volume is required.

INCLOSED JIG
Cuts Dyeing Cost

HIGHLIGHTS: *Lots of 50 to 1,500 yd. dyed economically—Color applied by straight jig or pad-jig method—Dyeing time and chemical cost reduced—Color penetration and fastness equal those obtained by continuous methods.*



By FREDERICK A. ALTER

SMALL-YARDAGE DYEING has always cost too much. While large runs could be dyed efficiently and economically, the cost per yard soared when the dye run dropped to a few hundred yards or, at times, even less than 100 yd.

The need for a small-volume unit that could compete in dyeing cost with large-volume ranges has been urgent. At the moment it looks as though an answer has been found: the inclosed jig.

Dyeing of cotton piece goods on kettles and becks, following the methods established in the dyeing of woolens and worsteds, was the beginning of modern dyeing techniques. Many lightweight cotton fabrics are still dyed on such units with direct and developed colors. Knit goods, for example, are dyed almost entirely on kettles, since the goods can be handled on such units in a relaxed condition.

Originally, only direct and developed colors were applied to cotton piece goods; but with sulphur, vat, and the azoic classes of dyes, kettle dyeing in the rope form was not too satisfactory. Creases, wrinkles, and rub marks showed up, making the kettle dyeing of cottons a rather hazardous operation. Heavyweight cotton fabrics, combed-yarn constructions, and fine-count cottons such as broadcloths could not be run at all in the rope form.

JIGS DEVELOPED. The jig provided a means whereby fine cottons could be kept in a flat, smooth condition throughout the dyeing process. The jig also made possible the uniform application of vat, indigosol, sulphur, and naphthol dyes to practically every type of cotton fabric. The open jig was the first of its kind and is still the type found in most dyehouses.

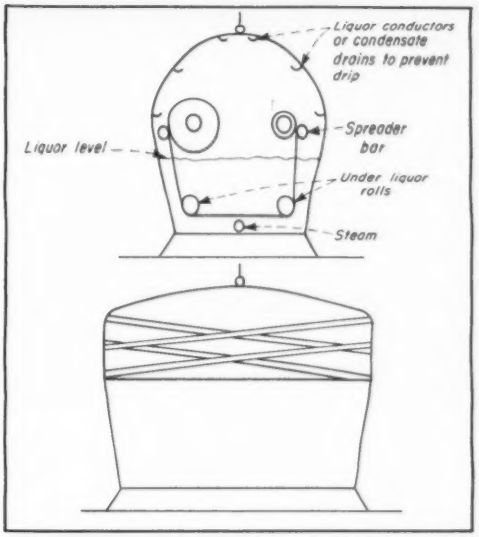
All jigs originally were manually operated, as are most of those in use today. However, there are modern types that can be set automatically for a given number of ends and require little attention from an operator. Jigs can handle runs ranging from 50 to 1,500 yd. per roll, depending upon the weight of goods.

With the advent of rayon dyeing, and the realization also that some cotton fabrics should not be subjected to undue tension, fully automatic, tensionless jigs were developed. Temperature and level controls installed on such units aid considerably in meeting the requirements for quantity output with high quality.

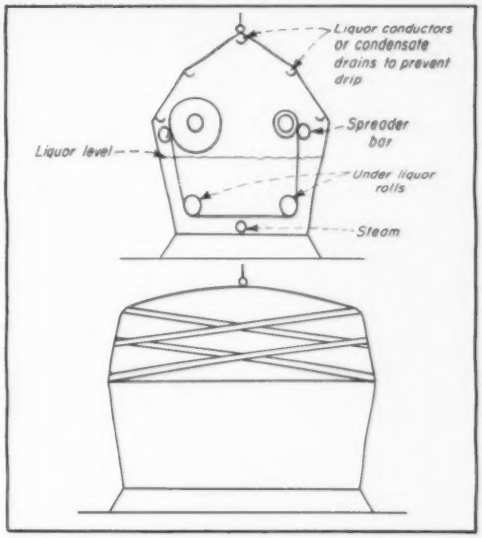
PAD-JIG METHOD. It was soon discovered that straight jig dyeing with vat colors did not provide the necessary penetration and fastness, especially in medium and heavy shades. Therefore, the pad-jig method of dyeing was developed. Here the vat pigment is padded on the goods, and the rolls are placed on the jig for development. This method is today generally used for obtaining maximum penetration and fastness properties on all types of cotton goods.

UNDERWATER JIG. Then another approach was made to the problem of uniform penetration and maximum fastness. This development was the underwater jig. On this machine, the material being dyed was immersed in the dyebath throughout the entire dyeing period.

Several advantages resulted from this method. First, the goods could be maintained at a given dyeing temperature and would not be alternately cooled and heated as on the open jig.



INCLOSED JIG WITH ROUNDED HOOD. *Hood excludes air and prevents cooling of jig roll. High dyeing temperatures can be maintained with low steam and chemical consumption.*



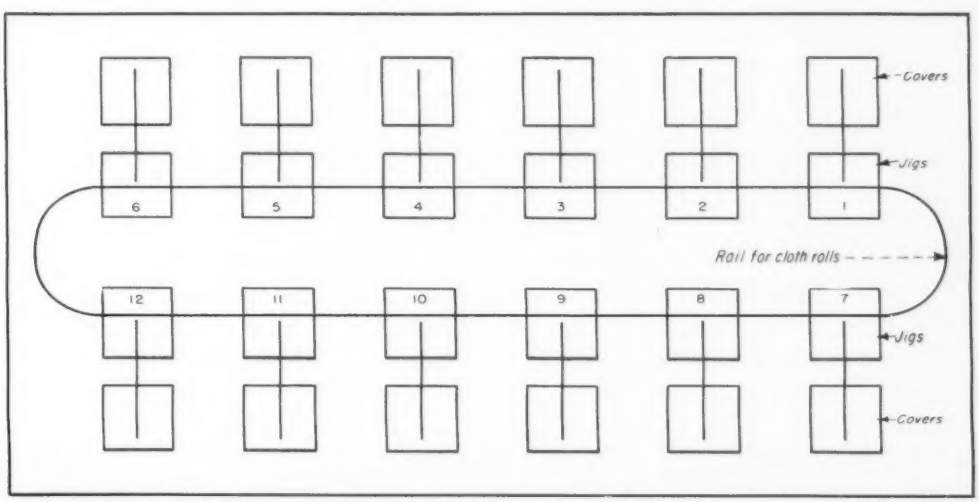
INCLOSED JIG WITH PEAKED HOOD. *Advantages obtained with this hood are the same as those obtained with a rounded hood. Both machines give good penetration and levelness.*

Second, the goods would be in constant contact with the dye liquor; whereas on the open jig, they were immersed for only a short period as they passed from one beam to the other. Third, a smaller quantity of chemicals was needed, since the goods were not exposed to air. In the case of vat colors on open jigs, extra hydro over and above what is needed for color reduction must be used because of roll exposure to the air. For heavy vat shades such as navies, browns, dark greens, etc., the underwater jig had its advantages.

On light vat shades the open-type jig still proved satisfactory. Many dyers preferred it to the underwater type even for heavy shades, in spite of small yardages per shade. The underwater jig was rather cumbersome, and a large liquor volume was necessary. The pad-jig method, utilizing open jigs, answered to a considerable extent the problem of the heavier shades.

CONTINUOUS DYEING. In the past few years there have been several developments in continuous-dyeing methods—such as the pad-steam and Williams-unit ranges. On such ranges large yardages can be produced economically and with good fastness. These developments have emphasized

(Continued on page 204)



PRODUCTION LAYOUT *of inclosed jigs could be arranged as shown. The overhead rail passes over the center of each opened jig to make loading and unloading easy.*

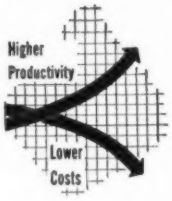
REACHING for empty bobbin, spinner takes the time recorded in Table I—Reach, Case C (26.7 T.M.U.'s x 0.0006 = 0.016 min.).

GRASPING the bobbin, she uses 0.005 min., or 8.7 T.M.U.'s as shown under Table IV, Case 1c.

DISENGAGING skewer from bobbin, spinner takes 0.003 min., or, as Table VI states, 5.7 T.M.U.'s for Class 1.

MEASURED MOTION

HIGHLIGHTS: *Creeling operation on spinning frame measured by reference to time chart for basic motions—Chart has been applied to sewing and weaving jobs—Time values, called T.M.U.'s, are equal to 0.00001 hr., or 0.0006 min.*



By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

TIMING A TEXTILE JOB by means of method measurement rather than a stopwatch is a three-step task that consumes roughly one tenth the time taken by conventional methods. (1) The basic motions of the job are analyzed and recorded. (2) The time value for each basic motion is developed from the application-chart data shown on the opposite page. (3) The time values assigned by the various tables to the motions are totaled.

Does this mean that the timestudy engineer now has a complete set of universal time values for work that will eliminate the stopwatch? And that all he has to do is to record motions or methods rather than to read the watch?

The chart called Methods-Time Measurement is a step in that direction. While some jobs such as the creeling operation, illustrated above, work out amazingly close to actual stopwatch timing, other jobs may require further research by the mill timestudy engineer for precise measurement. Standard data from the chart and the principles underlying methods measurement have been applied to sewing and weaving mills in from ¼ to 1/10 the time taken by conventional timestudy. But the standard time values were developed from actual study of the mill conditions.

The foregoing is the reason why the new method of work measurement has been published. Its sponsors, Methods Engineering Council, Pittsburgh, Pa., present it for general use and constructive criticism by the textile industry. They welcome variations or improvements that will increase the range of application.

The time values of the present chart were established from hundreds of film studies of many different types of work in varied sections of the country. A 15% leveling factor is included in the present time values, since it appeared to make the values more consistently accurate. The time value itself is expressed in time-measurement units, or T.M.U.'s.

VALUE OF T.M.U. Each T.M.U. is equivalent to 0.00001 hr. The actual decimal figure was avoided because it would contain too many ciphers. It is suggested that the total value of all basic motions in a job be obtained in T.M.U.'s. The total should then be multiplied by 0.0006 to obtain the decimal minutes; and by 0.036 to arrive at the seconds.

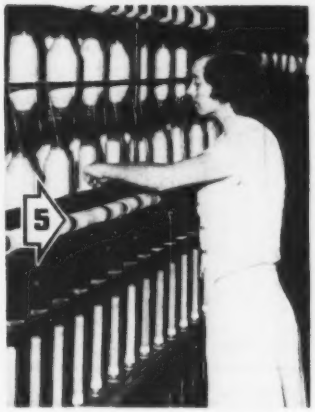
It is necessary to break down the job into basic motions, rather than into general elements as in the case of timestudy. Thus, the creeling operation illustrated above takes such basic motions as "reach, grasp, disengage, position," as well as several other basic motions which, though included in the total time allowed, are not shown in the photographs.

The analyst must classify each basic motion according to the conditions under which it is made. Under Table I, "reach" is classified for five conditions. This classification points out one of the primary differences between basic measurement data required by industrial engineering and that required by any other form of engineering. The time data for measuring work is a combination of physical and mental reaction times in varying degrees; not at all like mechanical engineering data, for example, which is based on purely physical reaction times.

For this reason, the analyst must obtain conditions that fit those in the

(Continued on page 212)

POSITIONING skewer base to creel, she uses 0.006 min., or 10.4 T.M.U.'s (See Table V, non-symmetrical class).



POSITIONING the roving strand takes 0.0130 min., or 21 T.M.U.'s, according to Table V, non-symmetrical close fit.

TOTAL TIME

Total time for all motions in creeling equalled 0.175 min., compared with 0.180 min. actual stopwatch time.

TIMES FOR CREELING TAKEN FROM CHARTS BELOW

Basic motion times of creeling job at the left were taken from the chart called Methods-Time Measurement which is reproduced below. The times on the chart were developed by Methods Engineering Council, Pittsburgh, Pa. They are published for general use and constructive or destructive criticism. Aims of the chart are to speed the timing or measurement of jobs and to effect a measurement of method so that the "one best way" of doing work can be readily determined.

Times the Job Faster

METHODS-TIME MEASUREMENT APPLICATION DATA

TABLE I—REACH

Case	DESCRIPTION	Distance Moved Inches	LEVELED TIME T. M. U. A	B	C	D	E
A	Reach to object in fixed location, or to object in other hand or on which other hand rests.	1	1.9	1.3	2.1	1.5	2.0
		2	3.7	2.8	4.3	2.7	3.8
		3	5.0	3.9	5.9	3.8	5.3
		4	6.1	4.9	7.1	4.3	6.4
B	Reach to single object in location which may vary slightly from cycle to cycle.	5	6.5	5.3	7.8	5.0	7.4
		6	7.0	5.7	8.3	5.4	8.1
		7	7.4	6.1	9.3	5.8	8.7
		8	7.9	6.5	10.1	7.2	9.3
C	Reach to object in group.	9	8.3	6.9	10.8	7.9	12.2
		10	8.7	7.3	11.5	8.6	12.9
D	Reach to very small object or where accurate grasp is required.	12	9.6	8.1	12.9	10.1	14.2
		14	10.5	8.9	14.4	11.5	15.6
		16	11.4	9.7	15.8	12.9	17.0
		18	12.3	10.5	17.2	14.4	18.4
E	Reach to indefinite location to get hand in position for body balance or next motion or out of way.	20	13.1	11.3	18.6	15.8	19.8
		22	14.0	12.1	20.1	17.3	21.2
		24	14.9	12.9	21.5	18.8	22.5
		26	15.8	13.7	22.9	20.2	23.9
		28	16.7	14.5	24.4	21.7	25.3
		30	17.5	15.3	25.8	23.2	26.7

TABLE II—MOVE

Case	DESCRIPTION	Distance Moved Inches	LEVELED TIME T. M. U. A	B or E	C	D or B Hand in Motion	Multiplying Factor Weight	Factor
A	Move object against stop.	1	1.7	1.7	1.7	1.5	Up to 5#	1.00
		2	3.6	4.2	4.3	2.7		
		3	4.9	5.7	6.7	3.6		
		4	6.1	6.9	7.3	4.3	10#	1.03
B	Move object to approximate location.	5	7.3	8.0	8.7	5.0		
		6	8.1	8.9	9.1	5.7	15#	1.05
		7	8.9	9.7	10.6	6.5		
		8	9.7	10.6	11.8	7.3	20#	1.08
C	Move object to exact location.	9	10.5	11.5	12.7	7.9		
		10	11.3	12.2	13.8	8.6	25#	1.11
		12	12.9	13.4	15.2	10.0		
D	Toss object aside.	14	14.4	14.6	16.8	11.4	30#	1.14
		16	16.0	15.8	18.7	12.8		
		18	17.6	17.0	20.4	14.2	35#	1.16
		20	19.2	18.2	22.1	15.6		
E	Move object to indefinite location.	22	20.8	19.4	23.8	17.0	40#	1.19
		24	22.4	20.6	25.5	18.4		
		26	24.0	21.8	27.2	19.8	45#	1.22
		28	25.5	23.1	29.0	21.2		
		30	27.1	24.3	30.7	22.7	50#	1.25

TABLE III—TURN

Degrees Turned	Leveled T. M. U.	Degrees Turned	Leveled T. M. U.
30°	2.8	120°	6.8
45°	3.5	135°	7.4
60°	4.1	150°	8.1
75°	4.8	165°	8.7
90°	5.4	180°	9.4
105°	6.1		

SMALL: No load or parts up to 2 pounds—Use table value.
MEDIUM: Loads from 2.1 to 10 pounds—Use 1.57 x table value.
LARGE: Loads from 10.1 to 35 pounds—Use 3.0 x table value.

APPLY PRESSURE 16.2 T.M.U.

TURN is a special case of REACH or MOVE. It is accomplished by a turning or torsional motion, during which the hand and wrist turn. When TURN is combined with a normal REACH or MOVE, determine time for TURN and REACH or MOVE from the tables and use the larger value.

MEC FORM 804

TABLE IV—GRASP

Case	DESCRIPTION	Leveled Time T. M. U.
1a	**Pick up Grasp**—Small, medium, or large object by itself, easily grasped.	1.7
1b	Very small object or tool handle lying close against flat surface.	3.5
1c	Interference with Grasp on bottom and one side of object.	8.7
2	**Regrasp**	5.6
3	**Transfer Grasp**	5.6
4	Object jumbled with other objects so that Search and Select occur.	8.7
5	Contact, sliding or hook Grasp.	0

TABLE V—POSITION*

CLASS OF FIT	EASY TO HANDLE Symmetrical	EASY TO HANDLE Semi-Sym.	EASY TO HANDLE Non-Sym.	DIFFICULT TO HANDLE Symmetrical	DIFFICULT TO HANDLE Semi-Sym.	DIFFICULT TO HANDLE Non-Sym.
1—**Loose** No pressure required.	5.6	9.1	10.4	11.2	14.7	16.0
2—**Close** Light pressure required.	18.2	19.7	21.0	21.8	25.3	26.6
3—**Exact** Heavy pressure required.	43.0	46.5	47.8	48.6	52.1	53.4

SYMMETRICAL — Object can be positioned in **an infinite number** of ways about the axis which coincides with the direction of travel.

SEMI-SYMMETRICAL — Object can be positioned in **several** ways about the axis which coincides with the direction of travel.

NON-SYMMETRICAL — Object can be positioned in **only one** way about the axis which coincides with the direction of travel.

*Distance moved to engage—1" or less.

TABLE VI—DISENGAGE

CLASS OF FIT	Easy to Handle	Difficult to Handle
1—**Loose** Very slight effort—Blends with subsequent move.	4.0	8.7
2—**Close** Normal effort—Slight resist.	7.5	11.9
3—**Tight** Considerable effort—Hand recoils markedly.	22.9	34.7

TABLE VII—RELEASE

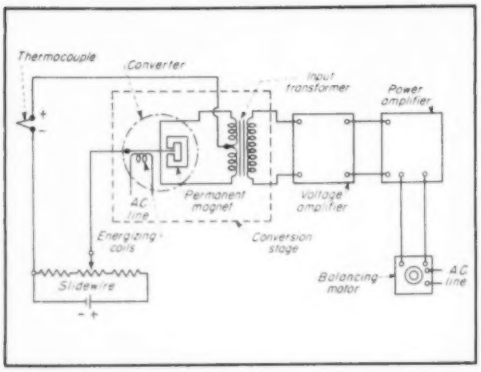
Case	DESCRIPTION	Leveled Time T. M. U.
1	Normal Release performed by opening fingers as independent motion.	1.7
2	Contact Release.	0

TABLE VIII—BODY, LEG, AND FOOT MOTIONS

DESCRIPTION	Distance	Leveled Time T. M. U.
Foot Motion—Hinged at Ankle.	Up to 4"	8.5
For heavy pressure add.		10.6
Leg or Foreleg Motion.	Up to 6"	7.1
	Each add'l. inch	1.2
Sidestep—Case 1—Complete when leading leg contacts floor.	Less than 12"	Use Reach or Move Time
	12"	17.0
	Each add'l. inch	.8
Case 2—Lagging leg must contact floor before next motion can be made.	12"	34.1
	Each add'l. inch	1.1
Bend, Stoop, or Kneel on One Knee.		29.0
Arise.		31.9
Kneel on Floor—Both Knees.		69.4
Arise.		76.7
Sit.		34.7
Stand from Sitting Position		43.4
Turn Body 45° to 90°—		
Case 1—Complete when leading leg contacts floor.		18.6
Case 2—Lagging leg must contact floor before next motion can be made.		37.2
Walk.	Per Foot	5.3

1 T.M.U. = .00001 hour = .0006 minute = .036 second

METHODS ENGINEERING COUNCIL
823 WOOD STREET PITTSBURGH 21, PA.

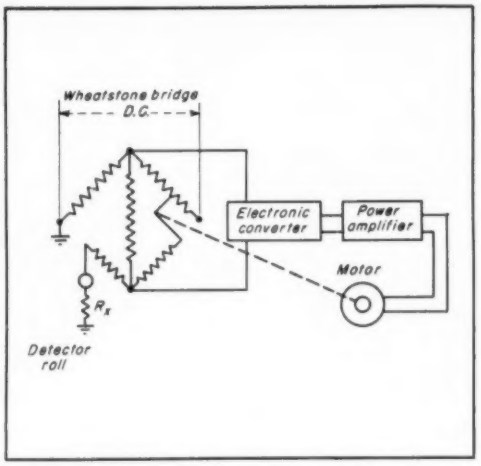


THE BASIC ARRANGEMENT of electronic components used to measure and control many textile operations is illustrated by the Brown Electronik potentiometer.

Fundamentally, it is an a.c. amplifying device. The system ends in a balancing two-phase reversible motor. This motor is used to actuate a pointer for indicating values, a pen and chart for recording the indications, and a mechanical device (such as an air valve or control switch) for controlling input of material or speed of a machine.

In operation, a small d.c. electrical voltage appears between the thermocouple and slidewire and is converted to a.c. voltage by a specially designed synchronous switch. The voltage is amplified almost 2½ million times and is used to energize one phase of the two-phase motor.

If a change of the variable (moisture, pH, stress, etc.) being controlled occurs, it is reflected in the magnitude of the d.c. voltage generated by the thermocouple. If the change amounts to 0.2% of the control scale, the potentiometer responds and brings control action into play within ½ sec.



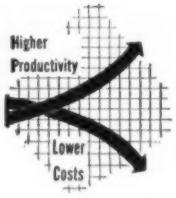
MOISTURE CONTENT in warp yarn is measured continuously on a slasher by the Moist-O-Graph electronic transmitter. The principle employed is that of electrical conductivity.

A detector roll contacts the moving yarn near the take-up beam at the front of the slasher and sends a small electrical current through the yarn. The magnitude of this current bears a direct relationship to the amount of moisture in the yarn. The current is detected by the transmitter unit, which consists of a Wheatstone bridge (to measure resistance), an electronic converter, a power amplifier, and a reversible balancing motor.

The electrical output of the transmitter is fed into a continuous balance recording instrument. It is used also for controlling the speed or the drying temperature of the slasher through the driving motors.

Electronic CONTROLS Remove Processing Guesswork

HIGHLIGHTS: *Moisture, pH, and other variables can be controlled within 0.2% of scale by an electronic potentiometer—Control action is started in ½ sec. and completed in 2 sec.—Size level, surface temperature of cloth or yarn, and warp-yarn stretch are also measured or controlled electronically.*



By CHARLES W. BOWDEN, JR.
Brown Instrument Co.

ELECTRONICS HAS BECOME an important and useful industrial tool. The use of electronics in the textile industry within the last few years has opened new avenues in improved processing equipment, resulting in time and labor economies. Today we find more and more electronic devices being employed in modern textile mills.

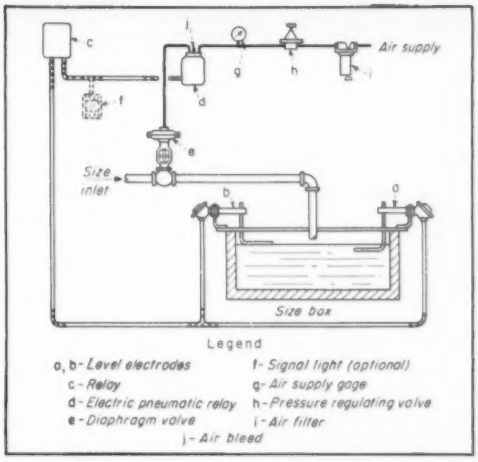
Continuous operations, together with a desire for higher product quality, require precise control. This need brought about many improvements in existing measuring and control instruments, as well as the development of new devices. A large percentage of these improvements and new devices have been made possible by the use of electronic principles.

Prior to the introduction of continuous processing, the only instruments used were to measure flow, temperature, and pressure. Now, it is necessary to measure or control such variables as torque, force, strain, speed, time, thickness, pH, etc.

Many of these measurements are not possible with mechanical-type instruments. In some cases, the nature of the variable itself requires electrical methods. In others, it was found that instruments operating on electronic principles gave better results than devices employing mechanical principles.

A few of the control devices now used by mills are illustrated and explained on these pages.

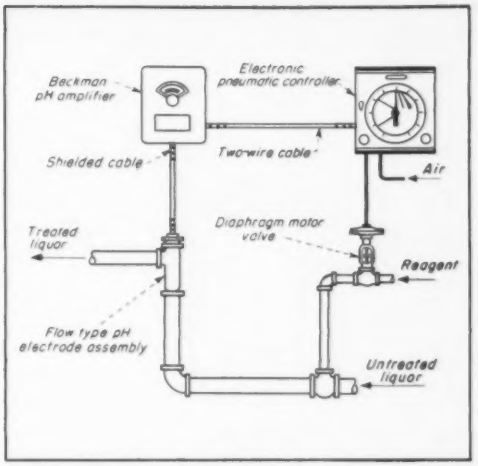
Sketches and explanations taken from a talk given at the Conference on Electrical Application for the Textile Industry, in Atlanta, Ga.



SIZE LEVEL in the size box of a slasher is controlled in many mills by an electric-pneumatic system. The system works in response to the electrical conductivity of the size.

Two electrodes are mounted so that they extend downward into the size box. Lower electrode *a* is placed about ½ in. deeper in the size than upper electrode *b*. When the size level drops below electrode *a*, the electrical current is broken and relay *c* is deenergized. Electric-pneumatic relay *d*, also electrically deenergized, permits air to flow through the line and actuate diaphragm valve *e* so that additional size is carried through the size pipe into the box.

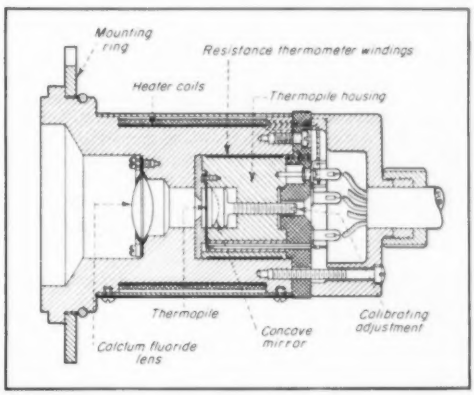
The purpose of placing electrode *a* lower than *b* is to prevent spasmodic opening and closing of the circuit, which would cause the relay to chatter and might result in foaming.



CONTROL OF pH in dyeing, bleaching, and finishing is practicable with an electronic control instrument in combination with pneumatic flow control.

As shown here, the untreated-liquor line is tapped by the line that carries the pH reagent. The treated liquor passes through a flow-type pH electrode assembly that detects the magnitude of the pH value. This detection is transferred to a pH amplifier, which feeds its output to an electronic control instrument.

The basic job of the pH control instrument is to measure the force of the electricity it receives and correct it to a constant electromotive force. The correction is made by controlling the flow of air that regulates the amount of pH reagent admitted to the untreated liquor line.

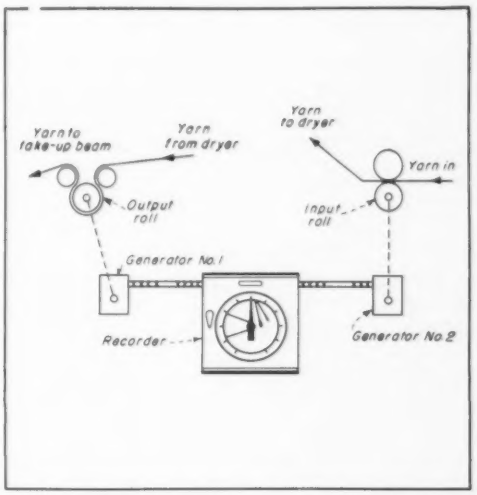


SURFACE TEMPERATURE of warp yarn or cloth running through a dryer can be measured by a device known as a Low Range Radiamatic.

Radiant heat given off by the yarn or cloth is gathered at a target area and focused onto a salt lens. It passes through the lens and strikes a group of small thermocouples called a thermopile. The thermopile creates a small electrical voltage. This voltage is fed to a potentiometer, which amplifies it to measure the surface temperature of the yarn or cloth.

The target area is 3¼ in. in diameter when the head is located 12 in. from the target.

For effective measurement, the surface of the material must give off radiant energy at a high and fairly constant rate over a temperature range of 100 to 600° F. Most materials do.



WARP-YARN STRETCH is indicated and recorded by an electronic device that utilizes the output of two tachometer generators.

Tachometer generator No. 1 is mounted at the front of the slasher, and No. 2 is placed at the back. The output of these two generators is fed to an electronic recorder, which houses an electrical network that measures the percent of stretch of the yarn. The percentage is indicated directly and is continuously recorded on a chart.

Photos by Crane Co.

WELL-KEPT FIXTURES are less likely to be abused than are dirty ones. Employees take pride in having clean washrooms.

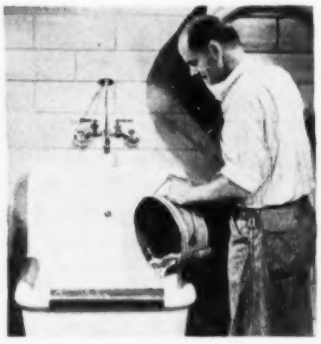
Cleaning Program Saves PLUMBING FIXTURES

HIGHLIGHTS: *Porcelain-enamel finishes and vitreous china surfaces similar to those on plate glass—Once surface is damaged, cleaning becomes progressively harder—"Glass test" will show up abrasive cleaners—Frequent cleaning is less costly—Psychological influence is important.*

By RICHARD IRMITER
Crane Co.

PLUMBING FIXTURES are tough. They will stand up under a lot of hard usage and still remain smooth and beautiful for a lifetime. But there is a limit to the abuse they will take. Toilet and lavatory fixtures were not made to stand on; to use as anvils; to serve as garbage cans, work benches, or tables. They should be kept in repair

"GLASS TEST" is rubbing cleaning compound between two pieces of glass. If glass is scratched, compound should not be used.



METAL GUARDS on rims and rubber pads in bottoms will help keep utility sinks in good condition.

POORLY KEPT FIXTURES invite further abuse by employees. A daily cleanup is a minimum requirement.

and cleaned often, for cleanliness is an effective check to ill treatment.

There are definite procedures that should be followed in cleaning and maintenance of textile-plant washrooms. It should be remembered that maintenance is a constant problem in such installations. Industrial plumbing fixtures are subjected to a hundred times the usage and abuse that home plumbing fixtures have to undergo. A faucet on a home lavatory may be turned on and off only a dozen times a day. In a busy plant washroom, a faucet may be turned on and off at intervals of a few minutes all day long —and all night long too, if the plant operates on extra shifts. Many people seem to delight in ill treatment of semi-public or public plumbing. Abuses that are taboo in the home appear to be accepted sport in the plant washroom by some.

Some vandalism is almost impossible to control. Policing the washrooms creates ill will and can lead to more and deliberate vandalism. Much of the effect of carelessness can be overcome by a regular maintenance program. For instance, if leaky faucets are repaired as fast as leaks develop, the water always shuts off when the valve is lightly closed, and the faucets are less likely to be damaged.

A dripping faucet not only means accelerated wear on the mechanism, but also large water losses. A steady dripping will waste more than 24 gal. of water a day—almost 9,000 gal. a year. With large numbers of faucets dripping, extra water costs can be considerable. Moreover, if a leak gets so bad that a stream of water as small as ⅛ in. in diameter is running, it will only take about three days to waste 9,000 gal.—over a million gallons a year thrown away, and from a single faucet! Add up these losses, and you really have a water bill.

CLEANING PROGRAM. A regular cleaning program is important. In the home, it may be sufficient to scour the plumbing fixtures and trim once or twice a week, but not a in a washroom used by dozens or hundreds of people daily. Here a daily cleanup is a minimum requirement, and two or more cleanups per day may be necessary. Such a planned cleanliness program engenders a greater feeling of respect for the equipment among users. A man is not so likely to put a hob-nailed shoe up on a lavatory rim to tie his shoe laces when the lavatory is sparkling clean as he is when the lavatory is dirty with soap scum and drippings.

Here is something to remember in cleaning vitreous-china or porcelain-enamel plumbing fixtures. Fixtures can be abused in cleaning as well as in use. Most people don't realize that these gleaming white surfaces are virtually the same glass surfaces that make for quality in the finest mirror or window glass. People use sand, harsh cleansers, or pumice to scour washroom lavatory surfaces, which have every bit as fine a finish as an expensive plate-glass mirror.

"Handle with care" if you would have plumbing fixtures that are glistening and gleaming for their lifetime. If you would know whether the cleanser you use will scratch the surface, take two pieces of ordinary glass and put a bit of cleanser between them. If rubbing the pieces together produces scratches on the glass, there is abrasive material in the cleaning agent that will just as surely scratch your fixture surfaces. Continued use of the cleanser will add more and more of the tiny scratches until the glistening finish has been destroyed and dirt becomes imbedded in the surface and cannot be removed. Don't be fooled by certain "fast" cleaning agents that derive their cleaning abilities from harsh and crude abrasives. Once the glaze is gone, the surface will be hard to clean.

MAKE CLEANING EASY. Treat fixtures with care in cleaning, and cleaning will always be easy instead of becoming progressively harder. A little soap and water will remove most stubborn dirt from plumbing fixtures. Stains and dried-grease accumulations do not have to be scoured away with abrasives. For a particularly stubborn bit of grime, attack the surface with a generous amount of hot water and a stiff bristle brush. Use plenty of soap to remove grease. Certain cleansers are satisfactory; but do not use a cleanser without first giving it the "glass test."

Abusive habits of the cleaning personnel can be the cause of marred fixtures. Scrub-buckets are a major cause of marring on fixture surfaces. Cleaning personnel may slam buckets down on a toilet rim in order to empty them. Or buckets are carelessly scraped around in the bottom of a utility sink. The inevitable grinding and scraping produces scratches on the surface. Rubber mats are available for protection of sink bottoms, and sink rims can be equipped with metal shields to prevent buckets and cleaning tools from marring the rims. Toilets should not be used for dumping buckets if utility sinks are provided for the cleaning personnel.

DRAINS. Keeping drains in condition is another important part of plumbing-fixture maintenance. When any fixture runs off slowly, it should be given immediate attention. Slow run-off not only causes wasted time and exasperation for the user of the fixture, but it increases the dirt accumulation

(*Continued on page 216*)

***SLOW RUN-OFFS** cause accumulations that increase the work of cleaning personnel. Keep a "plumber's friend" handy.*

***PROPERLY REGULATED FOUNTAINS** are less likely to have handles damaged or to be responsible for wet floors.*

***LEAKING FAUCETS** are more often found in unclean washrooms. A stream ⅛ in. in diameter can waste 3,000 gal. a day.*

NOMOGRAPH Gives Nep Count per Unit Weight

HIGHLIGHTS: *For comparative purposes, mills should convert neps per unit area to neps per unit weight—Equations show relationship between standard methods of expressing neppiness — Use of nomograph simplifies operation.*

By J. F. BOGDAN*

Dept. of Textile Research, School of Textiles
North Carolina State College

NEP COUNTS expressed on the basis of area of card web are not comparable between mills or in the same mill if the weight of the web is not the same. For purposes of comparison, then, it is desirable to be able to convert values from neps per unit area to neps per unit weight of material. Some mill laboratories weigh the sample of card web after counting and express their result as neps per gram or neps per grain. However, this method involves the extra operation of carefully weighing a small amount of material on an analytical balance. It is possible, and simpler, to convert mathematically nep-count readings when the card sliver weight is known.

A.S.T.M. Standards on Textile Materials (Designation D414-47T) specifies that the neppiness of cotton shall be calculated in three ways, as follow:

1. As the percentage by weight which the neps and fiber tufts on fragments of seed constitute of the whole specimen.
2. As the relative number of neps and fiber tufts in one gram of the test specimen.
3. As the relative number of neps in yarn of any given count, say 22s, in terms of neps per 100 yd., as if each of the neps and fiber tufts on fragments of seed would form one nep in the yarn.

The U. S. Department of Agriculture spinning laboratories, on the other hand, express nep-count results as the number of neps per 100 sq. in. of card web.

The first mode of expression given by A.S.T.M. has not been accepted generally by laboratories because of the difficulty encountered in trying to remove neps from stock without including some normal fibers. However, there is a relationship between the other methods which will be shown below.

One yard of card sliver corresponds to a card-web area in square inches of 36 x width of card in inches, if the slight tensioning between the doffer and the coiler rolls is neglected. From the weight of card sliver the neps per grain can be calculated.

If W = width of card in inches
N = neps per sample of web
A = area of sample of web in square inches
G = grains per yard of card sliver
N_g = neps per grain of card web,

the weight in grains of the web sample

$$= \frac{G \times A}{36 \times W}.$$

The general formula for neps per grain is

$$N_g = \frac{36 \times W \times N}{G \times A} \qquad \text{(Equation 1)}.$$

Neps per gram, N_g, would be 15.43 times the values obtained by equation 1:

$$N_g = \frac{555.5 \times W \times N}{G \times A} \qquad \text{(Equation 2)}.$$

The U.S.D.A. spinning laboratories use 40-gr. card slivers and have 40-in. cards. Conversion of their nep designation to neps per gr. is accomplished by substitution in Equation 1, so that

$$N_g = \frac{36 \times 40 \times N}{40 \times 100} \quad \text{or}$$

$$N_g = 0.36N$$

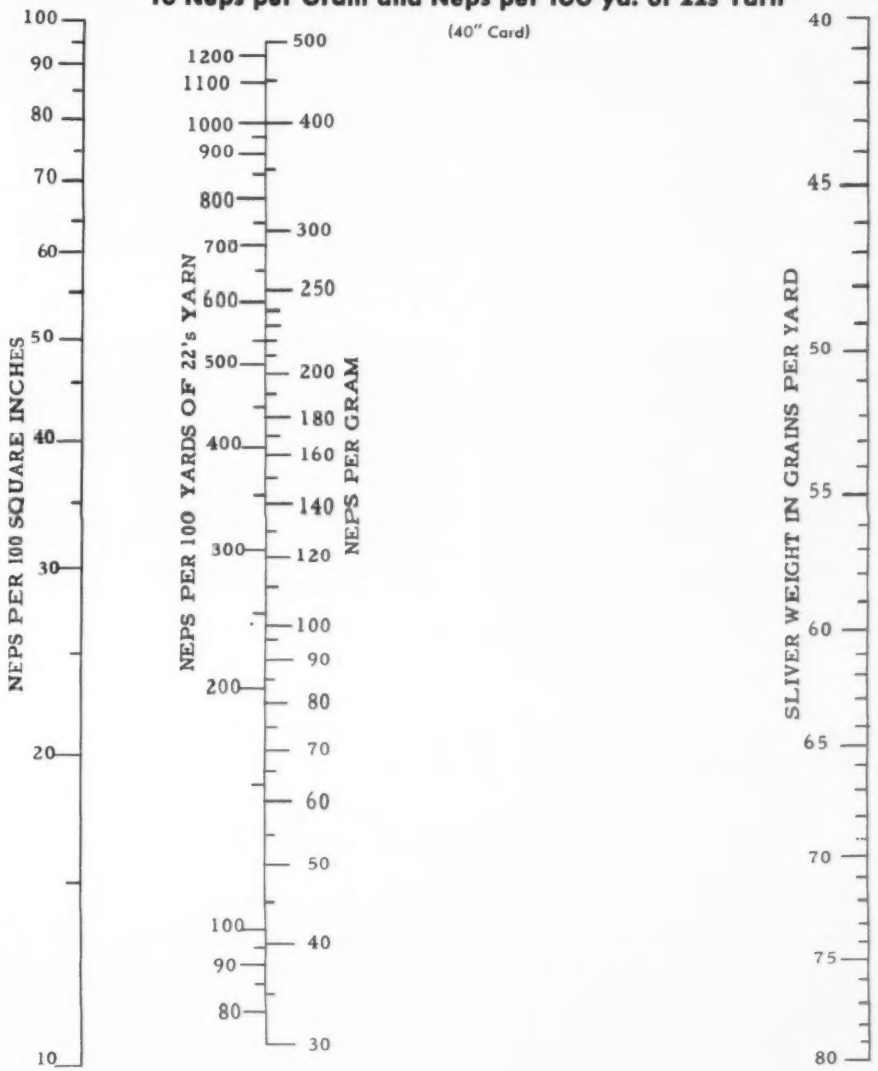
Neps in Card Web U.S.D.A. Rating and Conversions

Rating	Neps per 100 sq. in.	Neps per grain	Neps per gram
Low	1 to 15	0.3 to 5.4	5.6 to 83.3
Average	16 to 25	5.8 to 9.0	88.9 to 138.9
High	26 to 40	9.4 to 14.4	144.4 to 222.2
Very High	Above 40	Above 14.4	Above 222.2

NEP COUNTING is easier, more accurate with the template developed at the School of Textiles, North Carolina State College. [TW, June '49, p. 142]

* A report of work done under contract with the U. S. Department of Agriculture and authorized by the Research and Marketing Act. The contract is being supervised by the Southern Regional Research Laboratory of the Bureau of Agricultural and Industrial Chemistry.

Alignment Chart for Converting Neps per 100 sq. in. of Card Web To Neps per Gram and Neps per 100 yd. of 22s Yarn



where N is the number of neps per 100 sq. in. of card web.

The neps per gram are calculated by substitution in Equation 2:

$$N_g = 5.55\,N.$$

The U.S.D.A. nep ratings and conversions to a weight basis are shown in Table 1.

The figure for the neps per 100 yd. of 22s yarn, N_{22}, is obtained from Equation 1 as follows:

100 yd. of 22s yarn weigh 37.88 gr.

$$N_{22} = \frac{37.88 \times 36 \times W \times N}{G\,A}$$

$$= \frac{37.88 \times 36 \times W \times N}{G \times A}$$

$$= \frac{1363 \times W \times N}{G \times A}$$

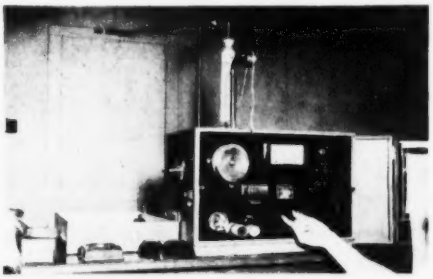
For a 40-in. card and 40-gr. sliver,

$$N_{22} = \frac{1.363 \times N}{A}$$

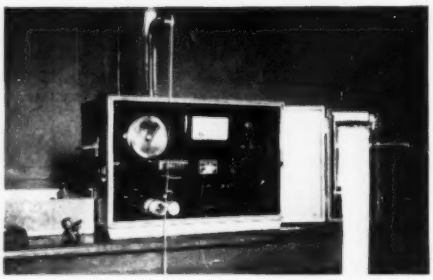
It should be noted that this conversion assumes that there is no further change between carding and spinning in the number of neps in the stock.

The alignment chart shown can be used to make conversions for a 40-in. card. The values for neps per 100 sq. in. of card web and the sliver weight in grains per yard are joined by a straight line. The values for neps per gram or neps per 100 yd. of 22s yarn are read off the appropriate scale at the point of intersection of the straight line.

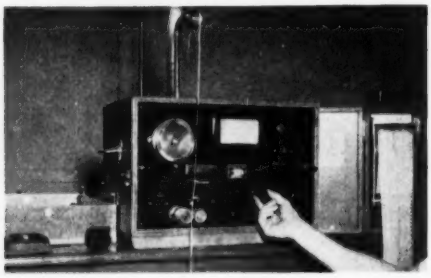
How Parkdale Sets Up New Tester For 2.30-Hank Roving



1 *MEASURING CIRCUIT of new tester is balanced with recording by means of knob.*



4 *SETTING to zero is done by means of "average-value" knob while roving runs through at high speed.*



5 *VARIATIONS in roving are amplified by vacuum tubes and are recorded automatically on graph.*

NEW SLIVER TESTER
Spotlights Quality

HIGHLIGHTS: *Periodic sliver-evenness testing at one Southern mill nets increase of 26.7% in first-drawing evenness, 14.2% increase on combers—Another organization, Parkdale Mills, sets up electronic tester in less than one minute.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

EVENNESS TESTING of sliver, roving, and yarn determines quality and checks fitness of production machines according to the latest practices of some Southern cotton mills. New evenness testing devices are set up in a few seconds; they handle all sizes and types of carding and spinning stock; they permit mills to make periodic check tests on work from cards, draw frames, combers, roving frames, and spinning frames. As a result of organized testing, one Southern mill netted an increase of 26.7% in evenness from first drawing, a proportionate improvement from finisher drawing, and an increase of 14.2% in evenness from combers.

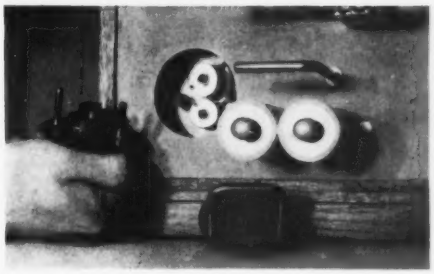
Another plant, Parkdale Mills, Gastonia, N. C., achieved improvements in evenness by means of organized testing with the relatively new Uster tester. It measures variations as percentages of the average. The dielectric properties of textile strands cause variations in the machine condenser proportionately to variations in the strand. Vacuum tubes amplify variations as a strand passes through the measuring comb, and a recorder shows the variations on a graph.

For graph recording, four ranges of scale are possible with the machine at Parkdale: plus or minus 100%, plus or minus 50%, plus or minus 25%, and plus or minus 12.5%. Identical percentage readings can be obtained from all four scales.

The small scale (12.5%) enlarges the graph record eight times compared to the 100% scale. It makes quite visible relatively small variations, such as in card sliver. Actually, at Parkdale, both the 12.5% and the 25% scales are used on card sliver and similar stock. The 50% scale is used on roving strands; and the 100% scale on yarns.

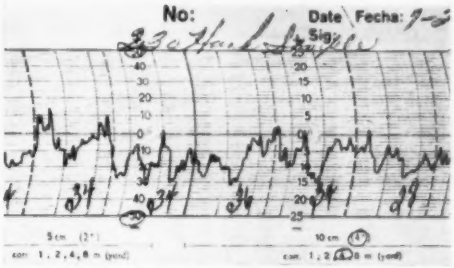
A systematic testing of yarn, however, has not yet been started at Parkdale Mills.

(*Continued on page 208*)



2 *MATERIAL FEED is set at 4 yd. per min. by means of a quick change in the driving gear chain.*

3 *ROVING STRAND is placed between condenser plates, and the indicating needle comes close to zero.*



GRAPH OUTLINE of 2.30-hank roving shows variation of 34%. Yarn speed was 4 yd. per min.; paper was fed 4 in. per min.

Sliver	% Excellent	% Good	% Fair	% Poor
Card	8	9-10	11-12	13 plus
Comber	25	26-30	31-35	36 plus
First Drawing	20	21-25	26-30	31 plus
Second Drawing	15	16-20	21-25	26 plus

EVENNESS STANDARDS, above, were found at one mill which charted permissible or tolerable variations from different processes. Standards were not used primarily to fix definite evenness for any particular stock.

HOW ANOTHER MILL EVENS SLIVER BY ORGANIZED TESTING

Evenness Test of Combers (1⅛-in cotton)

Comber No.	Date of Test Mar. 28, 1949 % Variation	Date of Test Apr. 28, 1949 % Variation	Date of Test July 16, 1949 % Variation
1	25.2	33.7 (22.6)**	21.9
2	26.0	28.0	37.1 (28.7)
3	33.6	33.6	28.0
4	29.0	31.9	23.6
5	28.5	24.0	20.7
6	27.3	24.1	22.4
7	25.8	25.8	24.9
8	29.0	23.6	22.9
9	31.8	31.1	28.9
10	26.8	21.1	22.6
11	24.6	29.4	23.0
12	26.1	33.3	30.2
13	29.5	22.2	25.6
14	27.5	24.4	29.6
15	34.5	30.3	25.3
16	28.5	26.5	25.8
17	30.3	21.8	23.1
18	35.0	24.1	27.7
19	27.4	26.0	29.3
20	32.7	28.6	24.0
Average *	28.9	27.2	25.8

* Based on tests from 60 combers. ** Rechecked because of high variation; higher figure included in average for this test date.

Evenness Test of First-Drawing Sliver

Frame No.	Delivery	Date of Test Mar. 28, 1949 % Variation	Date of Test May 14, 1949 % Variation	Date of Test Aug. 6, 1949 % Variation
76	1	20.8	22.0	20.6
	2	22.8	28.0	16.6
	3	27.0	26.8	15.6
	4	21.6	20.3	18.4
Average		23.5	24.2	17.8
27	1	23.2	16.8	19.6
	2	20.8	20.8	18.6
	3	24.4	27.1*(19.1)	23.2
	4	21.2	18.4	23.4
Average		22.4	20.7	21.2
28	1	21.0	19.1	17.6
	2	19.0	18.8	18.0
	3	22.6	21.2	19.0
	4	19.0	24.4	21.2
Average		20.4	20.8	18.9
13	1	24.2	21.3	19.8
	2	25.2	20.5	18.6
	3	21.0	19.6	18.0
	4	24.2	20.3	18.8
Average		23.7	20.4	18.8

*Rechecked because of high variation. Delivery rolls repaired. Higher variation used in average.

COTTON COMBERS similarly check-tested showed reduction of sliver variation from 28.9% on Mar. 28, 1949, to 25.8% on July 16, 1949.

CHECK TESTS of all draw frames bi-monthly showed that this mill reduced sliver variation from 23.7% on Mar. 28, 1949, to 18.8% on Aug. 6, 1949.

MILL SAVES 25% ON FORMULA COSTS

Sunotex Replaces 3 Formula Components on Slashers Sizing Synthetic Warps

A textile mill was using a softening oil, a penetrant, and a preservative for sizing viscose and acetate warps on a Johnson slasher. The use of so many components was expensive. They were also hard to handle, because they either had to be dissolved separately before addition to the formula, or heated before compounding.

A Sun Engineer, asked to study this problem, recommended that all three competitive oils be replaced with a single Sun product—"Job Proved" Sunotex. There was an immediate improvement in smoothness and sizing, extending over a 4-year period. Also, the same components worked equally well on Fortisan and Nylon when these were added to production. There has been a 25 percent saving in formula costs. Furthermore, Sunotex is uniform in quality, easier to handle, emulsifies readily and requires no reconditioning.

This is typical of the reduction in costs and improvement in products made possible in many mills with the help of Sun Textile Processing Oils. For further information about Sunotex or other Sun products for fibre-processing, call or write the nearest Sun office. The services of a Sun Engineer are available without obligation.

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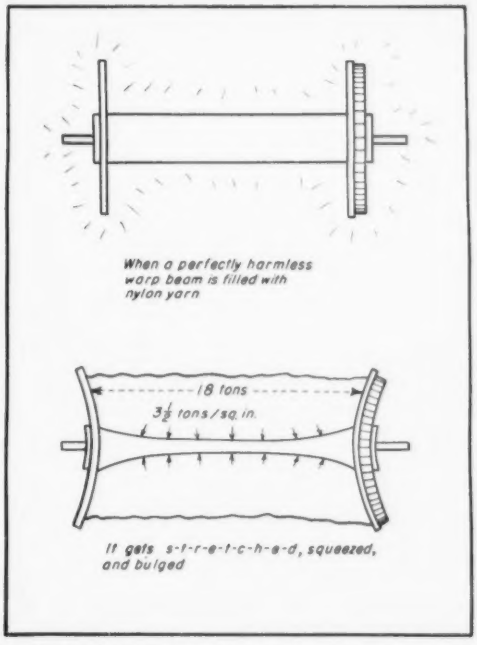


CAREFUL BEAM DESIGN can help keep beam distortion to a minimum, prevent yarn breakage.

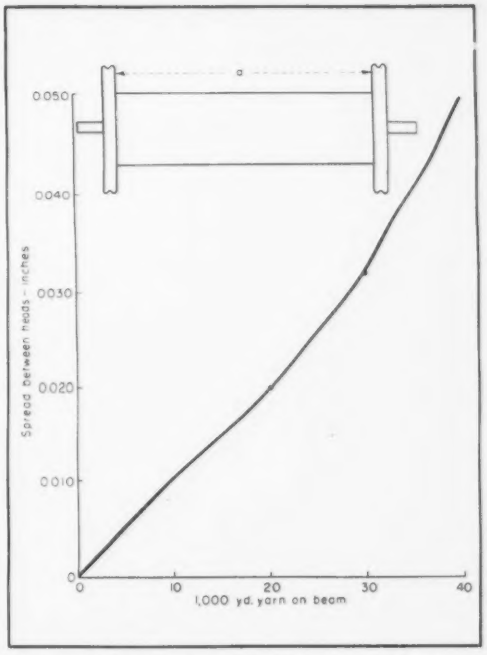


Fig. 1. WARP BEAM HEADS were 0.050 in. farther apart than normal at a after the beam was filled with yarn.

Strain-Gage Tests Reveal BEAM-STRESS DATA

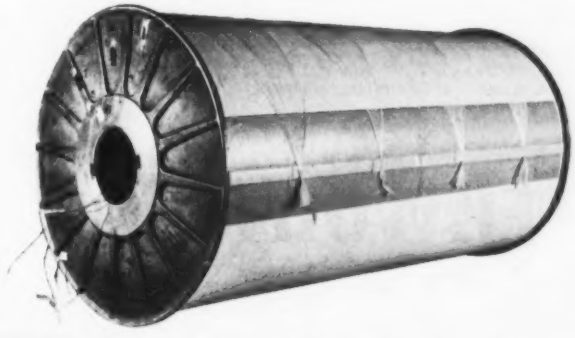
HIGHLIGHTS: *Tests indicate stretching and squeezing of barrel, bending of heads in warping—Nylon exerts greatest crushing stress; may be as high as 7,000 psi.*

By D. C. BENDER
Hayes Industries, Inc.

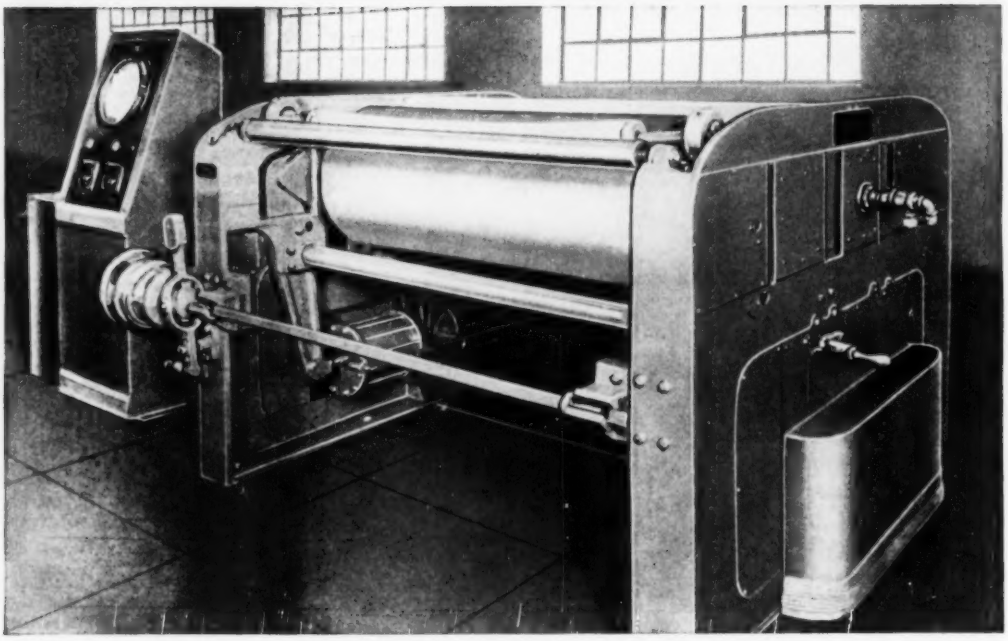
SOME SURPRISING THINGS happen to section beams when they're filled with yarn, especially nylon yarn. They stretch in length, are squeezed in diameter; and the flanges bulge out like dishes, according to strain-gage tests carried out by Hayes Industries, Inc., Jackson, Mich., in design and development work on light-metal beams.

For instance, a section beam with 28-in. aluminum heads, a 10-in.-diameter magnesium barrel, and measuring 54¼ in. between heads was filled with 40,000 yd. of 150-den. acetate yarn. Tension was 12 to 14 g., number of ends was 635; weight of the beam was 163 lb.

The stretching force in the barrel, due to the packing of yarn between the heads, was 36,800 lb., or over 18 tons. This force was calculated from the tensile stress of 3,250 psi. in the



STRAIN GAGES used in tests can be seen on left end of light-metal beam.



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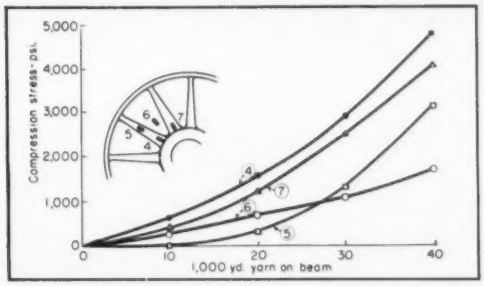


Fig. 2. GREATEST STRAIN on a beam during warping occurs at base of ribs, as indicated by curves of gages 4 and 7.

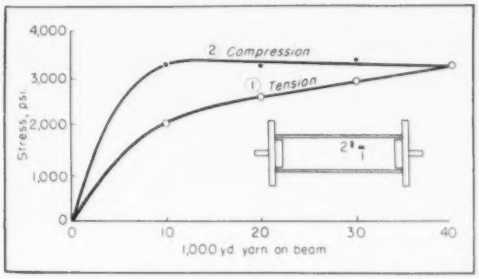


Fig. 3. RATE OF TENSION and compressive forces on a beam are highest during filling of first 25% of a beam.

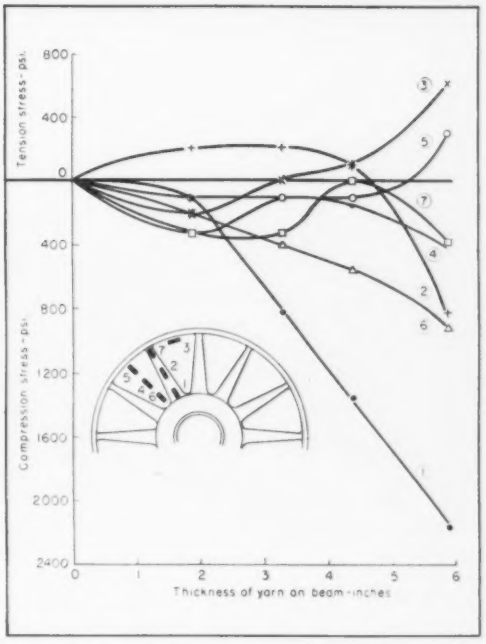


Fig. 4. TRICOT-BEAM TEST with seven strain gages showed variation of strain at various parts during filling of beam.

barrel measured by a strain gage, and the 11.34-sq. in. cross-sectional area of the barrel.

Figs. 1, 2, and 3 show further results of tests on this beam.

Fig. 1 shows the maximum spread between the beam heads, when completely filled, to be 0.050 in. over the normal length. Of this amount 0.016 in. was due to the stretching of the barrel as determined from a strain gage mounted on the inside of the barrel. The total deflection or "dishing" of each head was 0.017 in., measured at the outer edge of the heads.

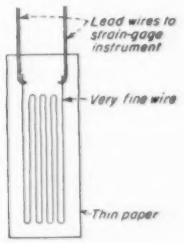
The data shown in Fig. 2 were taken to check the critical stress at the base of a rib. The maximum stress recorded was 4,850 psi. The aluminum material of the heads is good for a yield strength of 27,000 psi.—a safety factor of 5.57.

Fig. 3 shows that the rate of increase of the tension and compressive-stresses in the barrel was extremely higher for the first 25% of the filling of the beam. Apparently, this first portion of yarn helps to support subsequent layers of yarn.

The highest crushing stress measured in a test beam was 7,000 psi. This beam was a 21-in. all-aluminum tricot beam with a 7¾-in.-diameter-

(*Continued on page 151*)

HOW A STRAIN GAGE WORKS



Strain gages are very useful instruments in determining stresses in complex structures where calculation would be difficult. Basically, strain gages and recording instruments are quite simple. The gage itself, purchased in various sizes, is a fine grid wire sandwiched between thin paper, as shown above.

These gages are cemented to the part of a structure where the strain is to be measured. When the cement is thoroughly dried, the fine wire grid is integral with the metal. When the metal is in compression, the fine series of wires are also in compression and their diameter is increased very slightly. When in tension, the diameter of the wires is decreased slightly. Thus, when an electrical current is passed through the gage, the diameter change in the wires alters the electrical resistance of the gage. This change is measured by the instrument in terms of micro-inches strain per inch. The principle of this instrument is the same as a Wheatstone-bridge circuit.

In the early designing and developing of metal beams, Hayes Industries, Inc., used Baldwin Southwark SR4 electric strain gages in determining section thickness and rib shapes for minimum total weight with a maximum of strength and rigidity.

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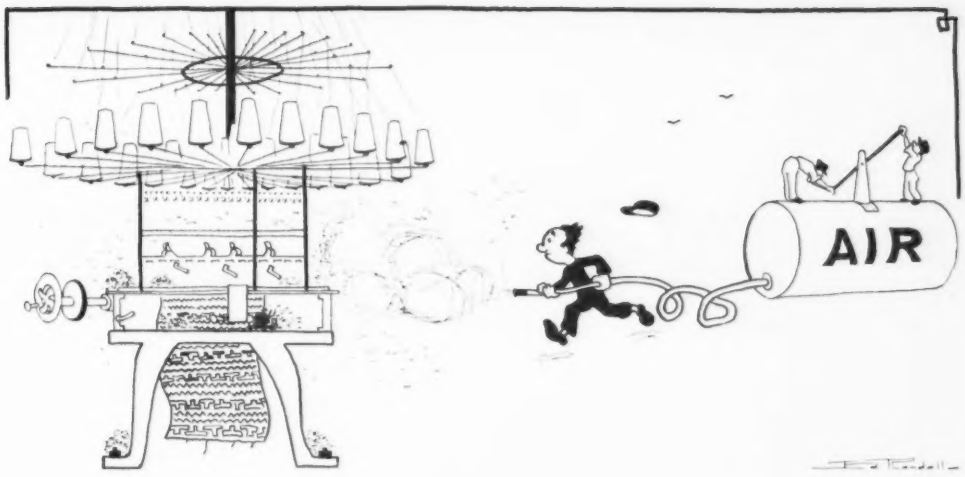


LINT Can Be Licked In Your Knitting Mill

HIGHLIGHTS: *Needle and sinker slots are especially vulnerable to lint—Accumulations can be kept off machines with well-regulated compressed-air tubings and fans—Care must be used to prevent dropouts.*

By LAWRENCE LEVY
Advance Mills, Inc.; Brooklyn, N. Y.

LINT ALLOWED to remain on a knitting machine is bound eventually to be knitted into the cloth. The less lint that is allowed to accumulate, the less chance of it to get into the needle and sinker slots. Once lint gets into these slots, lines in the cloth are bound to appear which result in cloth rejects; the cylinder has to be taken out of the machine, the needles and sinkers removed, and the slots cleaned.

Some mill owners seem to like to see lint on the machines, on the floor, and even on the yarn. To them, it signifies business activity. To others, it merely signifies a sacrifice in the quality of cloth coming off the knitting machines—such as, for example, in the manufacture of striped cotton cloth. Here, if a piece of lint is knitted in, it can mean only one thing—a damage. A cutter who cuts and sews a polo shirt from this cloth will mark the garment a second. He knows that the consumer is not going to purchase a first-quality polo shirt with a stray lump of cotton staring him in the eye.

Lint is a headache when it settles on the carrier ring. Blowing a machine with compressed air is one method of keeping down the accumulation. This blowing should be done just before a roll is to be removed from the machine; because if a dropout occurs, the piece can be cut at the damage.

USE OF AIR. Knitters should be educated in the care and use of compressed-air hoses. Air that is allowed to escape through a nozzle has a tremendous force behind it and must be controlled both as to force and direction if it is effectively to combat the accumulation of lint. When the top stop-motion is to be blown, the knitter should stand a few feet away and direct a gentle stream of air toward the lint that has wrapped itself around the stop-motion fingers. This blowing should be done only when the machine is in operation. If too great

(*Continued on page 202*)

How to Combat Lint Accumulation In a Knitting Mill

1. Use compressed air through a piece of metal tubing having a very small opening. Attach this tubing to the machine in such a manner as to direct a steady stream of air at the needles.
2. Attach another piece of tubing to direct a stream of air down on the sinkers to help keep the inside of the cylinder clean.
3. Mount a four-bladed fan directly over the top stop-motion. Slow fan speed to a point where a slight current of air keeps the stop-motion clean without tangling the ends.
4. If individual fans over each machine are impractical, attach fan to a monorail suspended over the rows of machines. An electric motor can drive the fan and also move it along the monorail.

Again Our Thanks

TO THE TEXTILE INDUSTRY

for Voting TEXTILE WORLD Its Favorite Magazine

Dear Friends in the Mills:

In 1947 a prominent research organization requested corporation officials, plant managers, and superintendents, from one end of the United States textile industry to the other, to name their favorite textile magazines. The vote was overwhelmingly for TEXTILE WORLD. We told you in January, 1948, that this remarkable vote, much as we appreciated it, would not make us complacent. We would continue to improve the magazine.

This year the same research organization sent out another questionnaire, addressed to officials in charge of plants, to superintendents, and this time to overseers. The overseers, as well as the other groups of executives once more, voted TEXTILE WORLD their favorite magazine. Again more men selected TEXTILE WORLD as their first choice than selected the next four magazines combined! And, furthermore, the same class of executives that had been questioned the first time expressed as a whole greater regard for TEXTILE WORLD than previously. In fact, in the case of superintendents the margin of preference over the closest contemporary showed an improvement of 50%. We think this is good evidence that we have kept our promise to continue to advance the usefulness of this publication.

We are immensely grateful for your appreciation, but we are not complacent even now. We want to do a still better job than we have been doing to help you make improvements in your product, reduce costs, maintain and increase your operating efficiency, and conduct your business affairs profitably. We want to assist you in making textile manufacture so efficient that this huge and important industry will not only assure the well-being of those engaged in it but will also contribute materially to a higher standard of living for the general public.

We respectfully, but urgently, request your cooperation in these endeavors. We want to know how we can better serve you. Tell us what we do wrong and what we do right. Describe the problems that you would like us to analyze editorially. It is largely to facilitate such cooperation that we publish a mailing card in the Reader-Service Department each month, by means of which you can write a note to the editors conveniently and quickly. The more frequently you use it, the more grateful we shall be.

Yours sincerely,

Elwin D. Towle

Publisher, TEXTILE WORLD

Cotton-Jersey SHRINKAGE Varies with Construction

HIGHLIGHTS: *Dimensional stability fluctuates according to number of courses and laundering testing—Lengthwise shrinkage increases inversely with number of courses—Width shrinkage increases in direct ratio to number of courses—Tumbling in laundering and drying increases length shrinkage more than non-agitated washing and drying.*

By DR. HAZEL M. FLETCHER

*Bureau of Human Nutrition and Home Economics, Agricultural Research Administration, U. S. Dept. of Agriculture**

FIG. 1. PIN APPARATUS *evaluates stretch and recoverable stretch of knit fabrics. A load of 50 g. is here applied in each direction merely to straighten fabric.*

MANUFACTURERS OF KNIT GOODS, particularly underwear, are much concerned over the lack of dimensional stability in knit fabrics. Because of uneven shrinkage in length and width when the fabric or garment is washed, an article often becomes unwearable through change in size and loss in shape. On the other hand, garments made from knitted fabrics that shrink the same amount in both directions will be the right size provided sufficient allowance is made for shrinkage. How much allowance is needed depends upon:

1. The effect that fabric construction has upon dimensional change.
2. How laundering procedures affect dimensional stability.
3. Whether the laundering methods now commonly used are satisfactory for knit fabrics.

Results of research recently completed by the U. S. Bureau of Human Nutrition and Home Economics throw some light on these problems.

For the study, ten jersey materials were knit from 36/1 carded Peeler cotton yarn. The number of courses per inch were 17, 20, 25, 30, 35, 40, 45, 50, 55, and 60. Courses per inch numbering from 17 to 60 were the fewest and approximately the greatest that could be knit on the machine.

LAUNDERING. The fabrics were laundered successively 11 times in a domestic-type automatic washing machine, using neutral soap flakes and water at 120° F. The machine was a cylindrical reverse-wash wheel and had a complete operating cycle of 40 min. The fabrics were tumble-dried for 60 min. at 160° F.

In order to determine the effect of agitation upon shrinkage, fabrics knit with 35 courses per in. were laundered successively 11 times with neutral soap flakes at 120° F. by two additional methods, using different amounts of mechanical agitation. One

(*Continued on page 149*)

* Acknowledgment is made to William D. Graham and Luella S. Joiner for their assistance in performing the laboratory work.

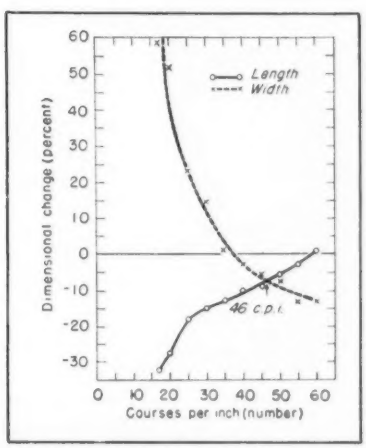


FIG. 2. DIMENSIONAL STABILITY *is obtained with 36/1 carded Peeler cotton yarn at 46 courses per in., according to this chart. A jersey fabric of this construction will shrink 7½% in both directions.*

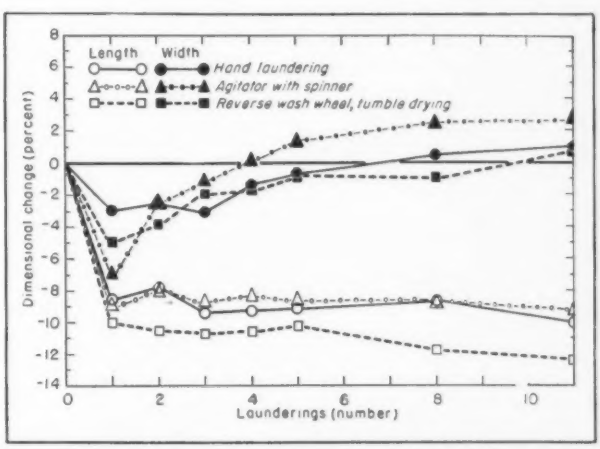
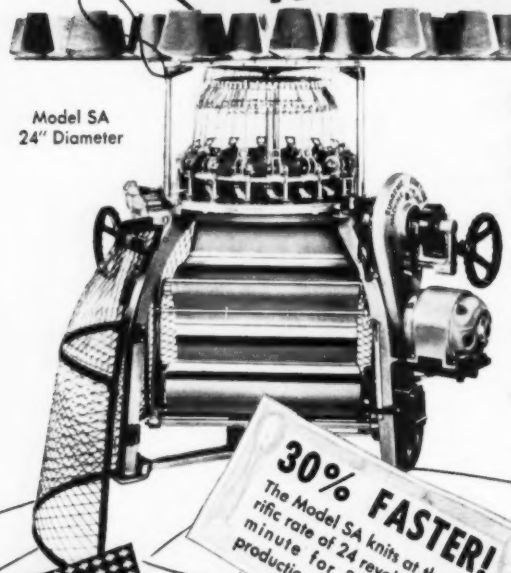


FIG. 3. LENGTHWISE SHRINKAGE *in a 35-course jersey fabric is 2% more in tumble-washed and dried samples than in hand-washed or agitator-with-spinner machine-washed fabrics, this graph reveals at lower right. Each method of laundering follows same trends for length and for width.*

SUPREME'S MODEL SA
THE WORLD'S FASTEST AUTOMATIC STRIPER...



Model SA
24" Diameter

KNITS DOLLARS FOR YOU

NO OTHER STRIPER GIVES YOU ALL THESE EXCLUSIVE MONEY-MAKING FEATURES.

- **New, Ingenious Automatic Striping System*** . . . Gives you world-beating production efficiency, versatility and durability.
- **Stationary Yarn Stand** . . . Assures trouble-free operation at continuous, super-fast knitting speeds. The cylinder and take-up revolve.
- **Automatic, Synchronized Cutters On Each Feed*** . . . Clip off the yarn that is going out of action, eliminating all waste.
- **Automatic Pattern Placer*** . . . Available on the SA, it lets you place patterns and plain or striped jersey wherever you want.

Write today for *free* cloth samples and the booklet "Variable Stripes and Plaids Pay."

*Patents Applied For

30% FASTER!
The Model SA knits at the terrific rate of 24 revolutions per minute for 30% greater production.

NO-WASTE!
Synchronized cutters eliminate all yarn waste. Cloth does not have to be reversed for finishing. Buyer gets all cloth for his money.

GREATER FABRIC VERSATILITY!
The Model SA, equipped with Automatic Pattern Placers, knits variable stripes, plaids, designs and "Pattern-Placed" cloth.

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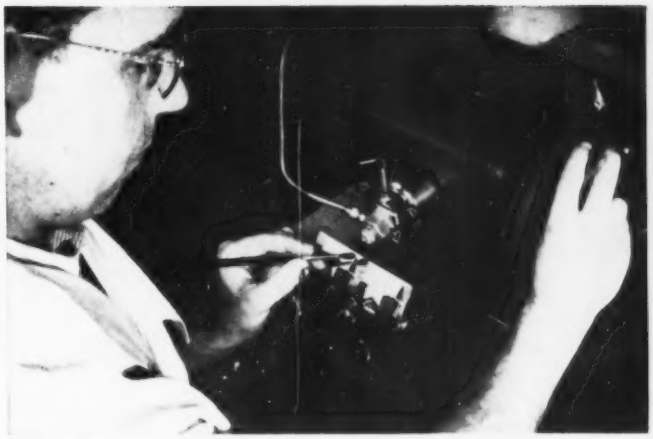


Fig. 1. BRASS SPECIMEN HOLDER (hex-shaped, center) is hollow, and alternately expands and contracts thermally through intermittent flow of carbon-dioxide gas (coming through tubing) as refrigerant. Hand wheel (right) allows for quick, chopping strokes when mechanical advancing motion of the microtome has been disengaged and when molecular action of the expanding brass alone is advancing the specimen into position for each succeeding cutting stroke.

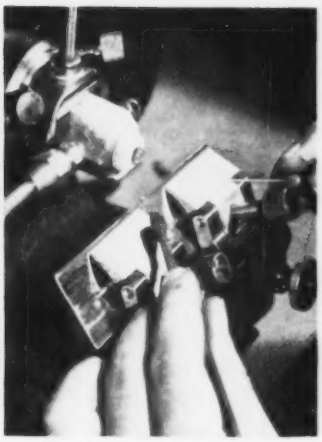


Fig. 2. SPECIMEN is before the knife of microtome, back into position after a manual cutting stroke forward. Sliced sections, which adhere to the knife, are lifted with the dry camel's-hair brush and picked up with the dissecting needle for placing in water.

Ultra-Thin SECTIONING Evolved for Fiber Study

HIGHLIGHTS: *New Bureau of Standards technique cuts specimens to thickness of 0.10 micron (1/254,000 in.)—Method first applied to leather and biological tissue—Procedure useful in study of all natural and synthetic fibers.*

Fig. 3. WATER, warmed on a hot plate, receives sliced sections, which are unfolded and flattened out on the water surface. Those sections which straighten out best and show interference colors are selected for further preparation for study.

Fig. 4. ELECTRON-MICROSCOPE SCREENS are placed over the sections before they can be observed under the miscroscope. These sections were first prepared for screening by setting them in a collodial film and then putting them back in the water.

A NEW TECHNIQUE for rapid and easy cutting of laboratory specimens to approximately one tenth of a micron (a micron is 1/10,000 cm., or 1/25,400 in.) has been developed by the National Bureau of Standards in its studies with both light and electron microscopes. The technique is now being applied to a new sectioning method in the study of various natural and synthetic fibers—cotton, rayon, and wool.

Early tests have been made with rayon. A complete investigation has also been started on the cellulose molecule of cotton, changes in the fiber as it matures, behavior under chemical processing, and degree of compactness or sponginess under various conditions.

The method involves embedding the specimen in a clear plastic and slicing it with an ingenious device that positions it by molecular action in preparation for each cutting stroke. Sections can be cut into any degree of thinness. There are two principal steps:

1. The specimen is embedded in a clear plastic, polybutyl methacrylate, involving the use of only two chem-

(Continued on page 206)

Cut your knitting cost on

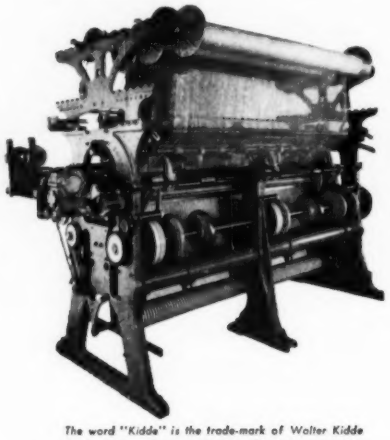
POLO SHIRT FABRIC

The *Kidde* Knitter will produce *more than double* the poundage of polo shirt fabrics, in comparison with prewar Raschel machines. The Chopper Bar on the *Kidde* Knitter operates smoothly, quietly and precisely. With the Chopper, mills are maintaining speeds up to 150 to 170 courses per minute. Without the Chopper Bar, mills are running up to 240 courses and producing 28 to 30 lbs. an hour.

That's typical of the new high production speeds obtained with the *Kidde* Knitter. A new drum drive and needle bar motion make these speeds possible—and the machine is designed throughout to withstand them.

Cut knitting cost on these fabrics too with a *Kidde* Knitter

ELASTIC FABRICS for corsets, girdles and brassieres. DRESS FABRICS. NETTINGS and VEILINGS. DISHCLOTH MATERIAL. LAUNDRY NETS. CURTAIN FABRICS. NARROW FABRICS. SHOE CLOTH. KNITTED OUTERWEAR FABRICS for sweaters as well as for polo shirts.



Free literature is available on the Kidde *Knitter. Write for your copy.*

The word "Kidde" is the trade-mark of Walter Kidde & Company, Inc., and its affiliated companies.

Kidde Knitter

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY

PRINTING OILS Speed Up Cohesion of Thickening Mixtures

HIGHLIGHTS: *Oils and oil emulsions increase lubrication, flow, and cleansing properties of print paste—High-dispersion properties are essential —Easing of paste surface tension reduces frothing—Oils act as softeners, penetrants, and wetting agents in finishing.*

By T. N. PATRICK

ON FAST-COLOR WORK, such as the printing of vat dyestuffs and stabilized azoics, the cohesion of thickener mixtures can be greatly increased by the use of oils and oil emulsions. Many types of thickener materials are employed, but all of them depend upon their swelling power in water for their effect. The cohesion of such mixtures, aided by printing oils and thorough mixing and preparation of the materials, results in better peneration of dye into fiber and fabric.

Ordinary olive oil may be added and evenly distributed throughout the mass of thickening during the two- to four-hour boiling periods. Whale or sperm oil produces smooth-working thickening agents, and also may be applied to thickenings which have already been prepared, or even to print pastes when trouble is encountered in printing an emulsion with a sulphonated oil, such as olein. Equal portions of the oils are thoroughly mixed until the emulsion readily suspends in water. It can then be mixed with aqueous print pastes without separation, often rendering a troublesome print paste easier to work.

Sulphonated castor oil may also prevent the frothing of print pastes. This effect is particularly noticeable with chrome-mordant dyestuffs. When frothing is encountered, the trouble may be cured by a small amount of olein diluted with water.

DISPERSION. In naphthol solutions for stabilized azoic printing, sulphonated castor oil with warm, dilute caustic soda may bring about thorough solution of the sodium naphtholate. The oil is pasted up with naphthol prior to the addition of the dilute caustic so as to get fine dispersion of the powder. However, the oil may react with calcium salts from the hard water, or from aluminum sulphate which is used as stabilizing agent for the diazotized bases (color salts). To avoid trouble, the cold dissolving process may be followed using methylated spirits instead of turky-red oil; and cold, dilute caustic instead of a heated alkaline solution.

There are many trade preparations, mixtures of sulphonated oils, and pine oils, which are recommended for the pasting of dyestuff powders. All of them have high-dispersion properties as well as good wetting activity; they produce more finely divided dyestuff pastes which are more easily dissolved before thickening. Such reagents apply well to the cellulose-acetate dyestuffs. In fine dispersion, these dyestuffs are applied to the cellulose-acetate materials. Their dye fixation is thought to be a solution phenomenon whereby the dyestuff is absorbed and evenly distributed, and not merely adsorptive whereby the outer cuticle alone of fibers is colored, as in many other types of dyeing or printing. A good dispersing agent is obviously essential.

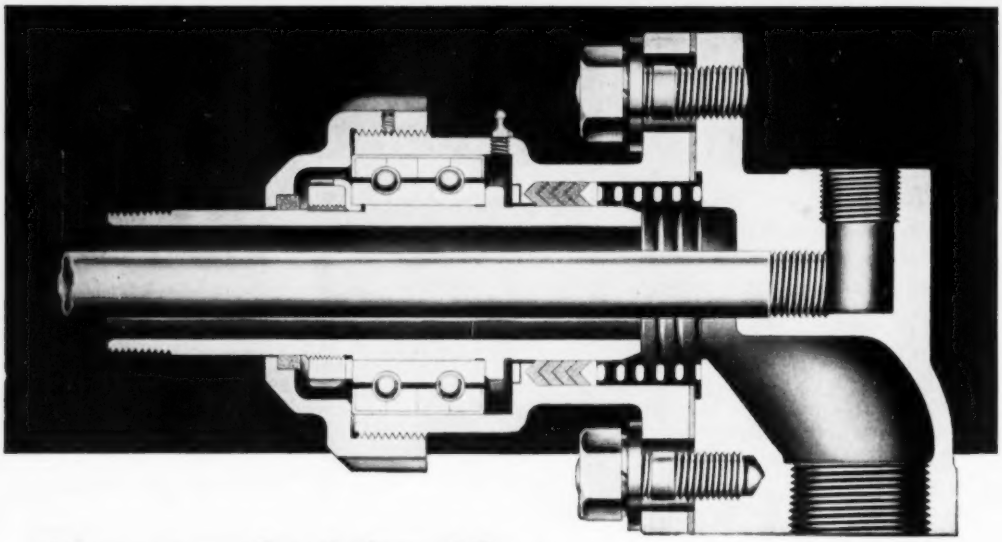
PRINT LUBRICANTS. Printing oils generally lubricate the print paste during the actual printing operation as well as act as dispersing and emollient agents in pastes. The paste is applied to the engraved copper roller from a color-box in which a furnishing roller revolves. The furnisher carries the print paste up to the engraved roller; and the surplus color is scraped from the unengraved surface of the roller by a sharp "doctor blade." Some lubricant should be applied between the edge of the doctor blade and the surface of the copper roller. This lubricant may be in the print paste itself; but if the latter is in poor condition for printing, the lubrication will not be satisfactory; the cleaning action of the doctor blade will be defective, and the printing-roller surface will be left with films of print paste which will adhere to the unprinted portions of the material.

The types of oil mentioned are easily oxidized. Sulphonated-oil prod-

(*Continued on page 222*)

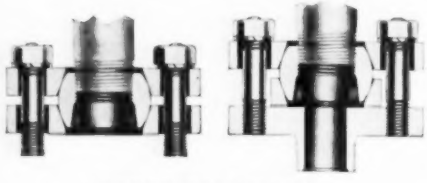
A good printing oil needs to:

1. Have high dispersion qualities.
2. Produce good wetting activity.
3. Make more easily dissolved pastes.
4. Apply well to cellulose-acetate dyes.
5. Eliminate resinifying and the formation of films.



Stays on the job with a minimum of maintenance

The BARCO REVOLVING JOINT



BARCO BALL FLANGE

Cross-section view of Barco Ball Flange for use on threaded and flanged rolls and for correcting roll misalignment. Sleeve can rotate concentric even though threads on roll are tapped off center.

For the Textile Industry

Textile weaving and finishing plants have found Barco highly successful in lowering maintenance time and costs. This special revolving joint is used on all types of rotating applications, including slashers, calenders, sanforizers and dry cans. Barco minimizes steam leaks and its lower turning torque reduces power costs.

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BARCO FLEXIBLE JOINTS

FREE ENTERPRISE—THE CORNERSTONE OF AMERICAN PROSPERITY

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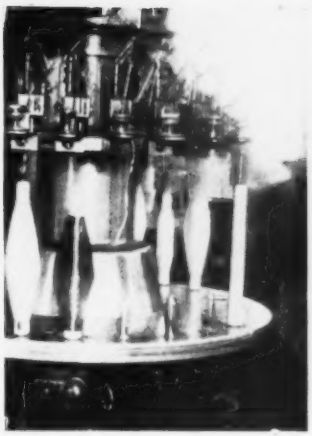
"MOVE IN EVERY DIRECTION"



WRAP YARN is saved by this stop motion that leaves a 12-in. tailing for cop retying. Note that tailing extends through tensions.

PRODUCTION GAIN of 5% results because operator does not have to rethread tensions when a cop runs out.

Novel Device Saves WRAP YARN

HIGHLIGHTS: *New stop motion saves annually 107 lb. of expensive wrap yarn per 15 half-hose machines at Harriss & Covington Hosiery Mills—Spring-actuated tripper engages stop-motion lever through ⅛-in. slot in partially empty cop—5% production gain estimated.*

By L. J. WILLIAMS

SUBSTANTIAL SAVINGS in the cost of wrap yarn used annually are being made by Harriss & Covington Hosiery Mills, High Point, N. C., as a result of equipping all wrap machines with a new stop motion developed and patented by officials of the company.

It is a common practice among knitters on wrap machines to try to avoid loss in production by removing cops from the machine before all the yarn has been used and putting full yarn packages on the holders. The unused yarn remaining on the cops is later wound off and becomes waste. The knitter has some justification in removing only partially emptied cops. He looks after a battery of from 15 to 20 knitting machines; and when wrap yarn runs out, the resulting stoppage makes it difficult to keep the job going.

Without the new stop motion, the knitter has to thread the yarn from a new cop through several tensions if the old cop runs out. Threading requires a considerable amount of time and effort throughout the entire day on a work load of even 15 machines.

Harriss & Covington Hosiery Mills have a total of 64 wrap machines, and it is not difficult to estimate that a considerable saving is made in the cost of wrap yarn purchased over an annual period by eliminating the wasteful practice of removing cops from the machines before all the yarn has been used.

ANNUAL SAVINGS. In calculating the wrap yarn saved at Harriss & Covington Hosiery Mills during an annual period for one style on a job load of 15 Banner wrap machines, it is assumed that each machine will use the yarn on 16 cops per day of 24 hr. This figure gives a total of 240 cops per day and 1,200 cops a week for the 15 machines.

Multiplying 1,200 by 52 weeks results in a total of 62,400 cops a year for one employee with a job load of 15 machines. The wasted yarn on each of these cops weighs approximately 12 gr., or a total of 748,800 gr. per yr., which is approximately 107 lb. annually for 15 machines.

Considering the high cost per pound of this wrap yarn and using a conservative estimate of 5% increase in production, the mill officials believe that the stop motions will pay for themselves in a very short period.

The operation of the stop motion is simple. Each yarn holder or post has a cut-out section in which is located a spring-actuated tripper. This tripper stays in place as long as a full cop is on the holder or post. However, each cop has a slot ⅛ in. wide and 1 in. long near the heel. When the yarn is exhausted on the cop, the tripper inside the post will be actuated by the spring and project through the slot in the heel of the cop.

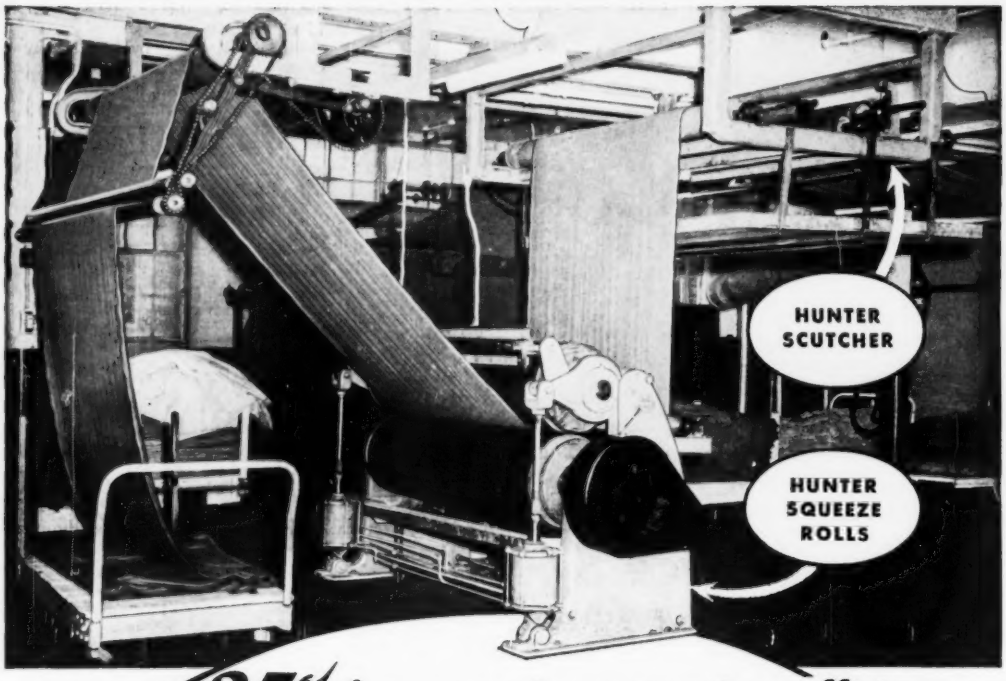
As the machine table continues to turn and come around to the stop-motion lever, the tripper extending through the slot in the cop will engage the lever and stop the knitting machine before the yarn has left the first tension.

The quick stoppage of the knitting machine leaves a 12-in. tailing for the knitter to tie to the end of yarn on the new cop. No yarn is wasted, and the machine is in operation again in less than half the time that would be required to rethread even two of the tensions.

The stop motion was designed primarily to save wrap yarn, but an additional advantage has been the increased production.

MORE PRODUCTION. With an average job load of 15 to 20 machines, it is easy to estimate the production time saved by the use of the new Harriss & Covington stop motion. It is assumed that the knitter requires about 1 min. to rethread the yarn through several tensions when putting on the new cop under the old system. With the stop motion on the machine, all the knitter has to do is tie the tailing to the end of yarn on the new cop. When calculated on the number of cops used annually, the total saving becomes apparent.

The new stop motion was developed and patented by the late C. W. Cox, of High Point, N. C. He was assisted by F. C. Morehead, superintendent of Harriss & Covington Hosiery Mills. Manufacturing and sales rights have been assigned to Archdale Machine Co., High Point, N. C.



...up to 35% *increase* in extraction efficiency

When a plant seeks greater and more uniform extraction of moisture from all woven fabrics, the economical solution will be found in the Hunter Model G, pneumatically controlled, squeeze rolls, similar to those pictured above recently installed at the Packard Mills. To assure continuous or straight line production, the Model G may be used in combination with a scutcher, in continuous cloth carbonizing or washer lines, on tracks in wet finishing rooms, or as a separate unit. It is adaptable to any woven fabric, either flat or pile type, on cottons, rayons, woolens, worsteds, and blended or manipulated fabrics. As much as 35% better moisture extraction has been proved in tests when the Model G has competed against vacuum extractors running at the same speeds on the same goods. The Model G requires less horsepower to operate than any other extraction equipment. For example: 5 to 7½ H.P. for the Model G against 20 H.P. for the average vacuum extractor. Orders and re-orders from modern mills throughout the country are proof of Model G performance and economy.

Write for Bulletin SRR. It contains complete details, drawings and photos of Model G squeeze rolls and scutchers.

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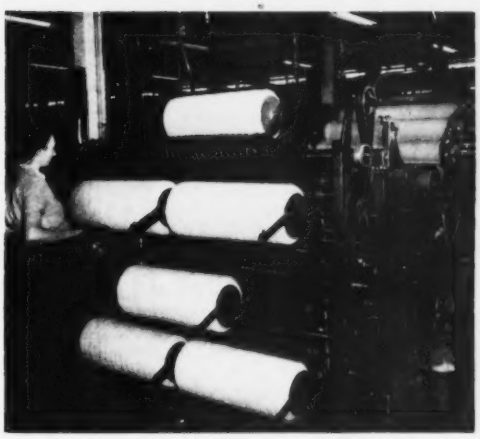
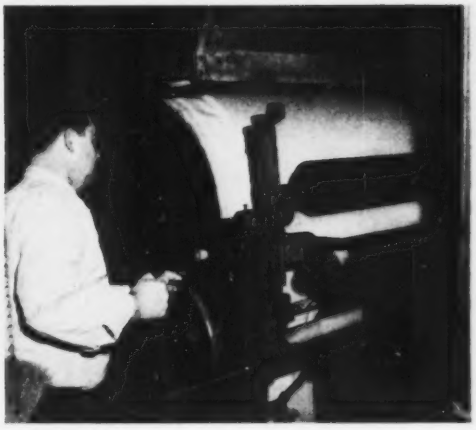


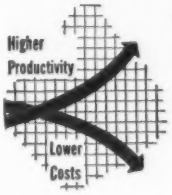
SAFETY CLOTHING reflects proper attitude of worker toward accident control, one of the main objectives of Talbot Mills program.



INSPECTION of physical safety by overseers accompanied by a consulting safety engineer occurs monthly in Talbot Mills.

SAFETY Controls Accident And Insurance Costs

HIGHLIGHTS: *Talbot Mills cuts compensation-insurance premium debit from 75% to 20% with unique system of accident self-insurance control—Plan assured Talbot against losses over 75%—Intensive training reduced loss ratio from 17.90% to 4.00%.*



By CLAIRE BURCH

COST OF ACCIDENTS at Talbot Mills, Billerica, Mass., has been reduced by systematic self-insurance accident control during the past three years. In 1946, Talbot Mills had an insurance premium debit of 75%. In 1948, it was cut to 20%; and company officials believe that it will be reduced finally to zero. Loss ratio for the first year of Talbot's plan of accident control was 17.90%, for the second year 15.93%, and for the third year 4.00%.

Inflated workmen - compensation costs caused the high debit that set Talbot Mills on the trail toward a better solution of accident frequency. Random efforts to reduce accidents had been ineffective. With professional consultant guidance, the mill was able to set up financial arrangements assuring Talbot that losses could never exceed 75% of their normal premium for compensation.

With this standard, the consulting company, Robert F. Coleman, Inc., and Talbot Mills proceeded with a plan of action that was carefully based upon the inspections and recommendations of safety engineers, and on the cooperation of overseers and plant officials through monthly inspections and group discussions.

Talbot's plan assumed that 80% of industrial accidents are caused by human failures and 20% by mechanical failures. Accidents were analyzed for origin, and the entire supervisory personnel was trained "to identify the problem, find the cause, determine the remedy, and apply it."

HIDDEN COSTS. Group discussion stressed the facts that compensation laws place the burden of industrial-accident responsibility mainly upon the employer and that hidden costs amounted to at least four times the cost of compensation and medical treatment. Hidden costs were identified as lost time of injured employees, lost time of other employees who stop work after the accident, lost time of supervisors, investigation of accidents and causes, breaking in of new employee, accident reports, equipment damage, spoilage of materials, and other items.

Group discussion and training classes in addition led Talbot Mills overseers into fundamentals of psychology when dealing with workers. The Coleman plan of training stressed the fact that an abnormal number of accidents in a department indicated that something was wrong between the worker and his foreman, the worker and his job, or the worker and his life outside the plant.

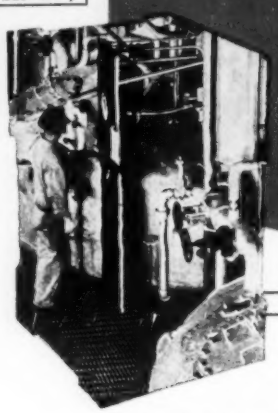
The worker-foreman relationship was said to be the most important from the standpoint of safety instruction. Without a good relationship between them, the foreman could not teach, and the worker could not understand. Accidents, the Talbot instructors said, are caused mostly by someone's unsafe motion or act. Machines don't chase men around in the mill to cause an accident.

Talbot Mills overseers learned from the Coleman plan that not all of

(*Continued on page 218*)

Wherever Purity Counts... *REMEMBER—*

Laboratory



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Cotton-Jersey Shrinkage

(Continued from page 139)

method utilized a domestic washer of the agitator type with a spinner. The other was a washing by hand.

For the machine method, a 10-min. wash with soap was followed by two 3-min. clear-water rinses. The fabrics were spun after washing and after the first rinse for 2 min. After the second rinse they were spun for 7 min., then laid flat on a screen to dry.

In hand washing, the fabrics were soaked in soap suds for 5 min., washed for 5 min., and given three 1-min. rinses. They were squeezed to remove as much water as possible, and then laid on a screen to dry.

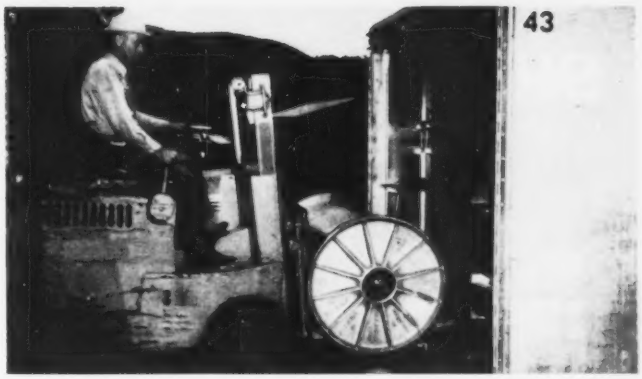
For marking and measuring changes in dimensions, the fabric was placed on the pins of an apparatus (patent applied for) devised for evaluating stretch and recoverable stretch of knit fabrics (Fig. 1). A load of 50 g. was applied in each direction when measurements were made. This load was just sufficient to straighten but not to stretch the knit material.

RESULTS OF TESTS. The greater the knitting stiffness (the number of courses per inch), the less the fabrics shrank in length when laundered. The material knit with 60 courses per in. stretched slightly.

In width, fabrics produced by slack knitting stretched excessively in laundering. Those tested that were knit with 17 courses per in. stretched 58%. As knitting stiffness increased, stretching deceased. The tested fabric of 35 courses per in. stretched a negligible amount, and that of 60 courses per in. shrank 13% in width.

The dimensional-change curves for length and width crossed at 46 courses per in. (Fig. 2). A fabric with this knitting stiffness would shrink 7½% in both directions; and therefore, *from the standpoint of dimensional change, this is the correct knitting stiffness for 36/1 cotton yarn on the machine used. This knitting stiffness* might be objectionable for some garments for which characteristics other than dimensional change in laundering play major roles.

The cotton knit fabrics laundered in the reverse-wash wheel, and then tumble-dried, shrank approximately 2% more in length than those laundered either by hand or by machine with no tumbling (Fig. 3). The hand wash and the machine wash without tumbling shrank the knit materials about equally in length. No doubt, the excessive agitation of the reverse-wash wheel and the tumble dryer caused the greater shrinkage.



***REMOVAL** of rayon warps from racks in the interior of a highway trailer truck delivering them is done by battery-powered industrial trucks at Marion Mfg. Co., Marion, N. C. This 1,000-lb.-capacity fork truck handles an 850-lb. warp easily.*

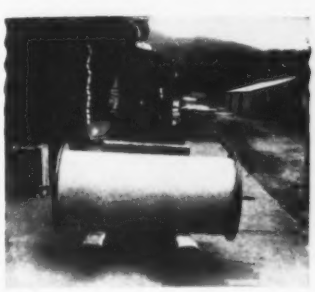
ELECTRIC TRUCKS
Expedite Warp Handling

***HIGHLIGHTS:** Marion Mfg. Co., Marion, N. C., reports fast and easy transporting of 850-lb. rayon warps with fleet of industrial trucks—Manual labor cost saved—Maintenance at a minimum.*

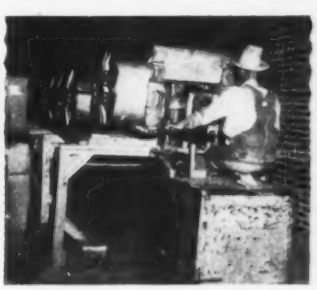
RAYON WARPS are now being handled more expeditiously, with less damage, and "at a great deal less cost" at Marion Mfg. Co., Marion, N. C. This increased efficiency in operation has come about since the company installed storage-battery-powered industrial-truck units for the handling and storage of bales, cases, warps, and beams.

Two fork trucks and a powered hand truck, of the platform type, comprise the present plant fleet. One fork truck has a capacity of 1,000 lb. and a lift of 60 in., while the second fork truck has a capacity of 2,500 lb. and can lift a load 90 in. vertically. The hand truck is used to transport skids and empty beams.

According to W. W. Greene, in charge of raw materials at Marion, the maintenance of the industrial truck units is "at a minimum, and our 'fuel' cost has not added any material amount to that which we expend for our over-all use."



***MANIPULATION** of warps by the truck is effected without trouble in a small area. Special padded sleeves, or "shoes," are placed on the front forks of the truck. "Shoes" are made of soft scrap material to prevent snagging or other damage to yarn on the beam.*



***STORING** by truck requires no overhead pulleys and a minimum of manual labor in the warehouse area. Truck places warps on racks and removes them when needed, placing them on another portable production-line rack which the truck can deposit where required.*

"SHELL WOOL OILS lick 5 processing problems right off the reel!"

because:

1. They scour out easily and completely with a minimum use of soap.
2. They have quick, even spreading and penetration characteristics.
3. They reduce static to a minimum.
4. They will not turn rancid in use or in storage.
5. They are self-emulsifying in any concentration.

"...and SHELL WOOL OILS give you these extra qualities"

1. They *will not rust* or corrode card clothing or machine parts.
2. They *will not glaze* or attack leather card aprons or tapes.
3. They *will not load* the cards.
4. They *will not separate* in use or in storage.

The Shell Lubrication Engineer will be glad to tell you all about the advantages of using Shell Textile Processing Oils. Samples for *your* own tests are available. Shell Oil Company, 50 West 50th Street, New York 20, N. Y., or 100 Bush Street, San Francisco 6, California.

SHELL

SHELL TEXTILE OILS

Forstmann New Wool Card

(*Continued on page 117*)

the new Forstmann card. This range of adjustment affords great flexibility in selecting the proper speed for all types of material from very coarse to very fine counts.

To mention an example, if the type of material calls for a reduction in the cylinder speed from the top machine speed of 140 rpm. to the minimum speed of 80 rpm., the output does not need to suffer. As a matter of fact, the production can even be increased although the cylinder speed is cut almost in half. Materials which need little carding can therefore be processed at a low cylinder speed but at a high production rate, and others which require much carding can be run through at a high cylinder speed at a lower production rate. The type of material is the only guiding factor in determining the speed.

According to Forstmann officials, one can figure on at least 90% efficiency, and sometimes even more, depending on what kind of raw-material is running through the card and how much stripping is necessary to keep the machine in good shape. To check the efficiency, Forstmann has attached a service recorder to the card.

A portable bridge is one of the accessories to the card. This bridge, when installed over the doffer makes possible stripping the various parts without the stripping crew standing on the doffer, thus protecting the pitch of the card clothing.

It is also very easy to change the number of ends on the tape condenser. According to specifications, a set of extra rolls for the tape condenser, consisting of shallow-grooved and deep-grooved rolls and roving-guide bars with suitable divisions, can be furnished. Thus one can have on one card as many variations as desired by using those rolls with the right number of ends needed for fine, medium, or heavy counts. Of course, each set of division rolls requires the proper set of leather tapes.

Beam-Stress Data

(*Continued on page 135*)

barrel with a ¼-in.-thick wall. Length at the barrel was 18 in. The beam was filled with 20-den. nylon.

RIB DESIGN. In designing a new beam, considerable attention should be given to the shape and size of the stiffening ribs of the heads. In most cases, warping machines are standardized to the point where the traverse and over-all measurements are uniform. This standardization makes a fixed space available for the head thickness.

Mills are interested in having a beam with a minimum amount of spread between the heads—one which is relatively light in weight and economical in cost. Extreme amounts of head deflection cause yarn-breakage trouble at the selvages when unwinding a filled beam.

Stiffening ribs should be made as deep as possible for the maximum economy of weight. Their width is determined mostly from test and previous experience, and must be sufficient to keep the head deflection within amounts usually specified by the mill. During tests of a new beam, strain gages have been mounted at the base of the ribs to show the maximum working stresses in the heads. Stress is equal to the strain-reading from the gages in microinches multiplied by the modulus of elasticity of the material being used. A safety factor of at least three or four above the working stress is usually desired in the final design.

Fig. 4 shows the results of a strain-gage test of an aluminum 21-in. tricot-beam head. During warping of the beam, the machine was stopped three different times to record readings of the strain gages. Gage No. 1 at the base of the rib showed the highest stress.

Referring to the curves, it is interesting to note that as the beam is filled, a slight deflection wave progresses outward from the hub of the head, putting the outer periphery of the head under an increasing amount of tension. Curve No. 2 shows the effect of this wave passing through the middle portion of the rib.

The relatively thin wall of ¼ in. for a 11¾-in.-diameter barrel complicates the problem of holding enough barrel cross-sectional area to stand the desired forces. A buttress-threaded joint was found to be the most desirable.

In addition to the threads on the hub portion of the head, a flat land is provided to make a shrink fit on a corresponding surface inside of the barrel. To accomplish this shrink fit, the ends of the barrel are heated before assembling the heads. This shrink fit and the high frictional properties of aluminum and magnesium resist any turning of the threaded joint.

Pull tests made on a buttress thread joint of a section beam, with a barrel of the size mentioned, showed that the joint would stand consistent trials of over 100,000 lb. before failure. Torque tests were made on the heads to test the frictional holding of the shrink fit of the land. Loads considerably above any that would be imposed in service would not turn the heads.

Another design factor arises when, in some cases, a beam design is influenced more by handling strength than by yarn forces. This consideration quite often is important with beams designed for use with cotton or spun rayon. The forces from these materials are very low compared with those from the synthetic yarns. The beam heads, then, are designed more from previous experience in withstanding the normal handling and occasional bumping and dropping that occur in a mill than from pure yarn-pressure calculations.

ALUMINUM OR MAGNESIUM? The question frequently arises as to which light-metal material to use—aluminum or magnesium. Many times the mill has a preference. If the beams are to be continually shipped back and forth, filled and empty, the lighter-weight properties of magnesium no doubt are more advantageous because of costs saved in shipping. Other customers prefer aluminum, especially for heads, because there is not quite the same amount of maintenance required. Magnesium requires a periodic light polishing and waxing of the inside faces of the heads to prevent corrosion.

Recently, the price for head castings, or extruded tubing for barrels, has been approximately the same whether using magnesium or aluminum. In the past, the price of these parts from one material would sometimes fluctuate, first lower on one, then on the other.

In the case of head castings of magnesium, it is usually necessary to have wider stiffening ribs than on the aluminum type, in order to have equal deflections. Theoretically, the ribs should be widened in the inverse ratio of the modulus of elasticity of the two materials—aluminum 10,300,000 psi. and magnesium 6,500,000 psi.

With the development of stronger and more elastic synthetic yarns, wise mill men will give more and more attention to design features of various types of beams necessary to hold this material.

CORROSION COSTS INDUSTRY

$6,000,000,000.00

ANNUALLY!

How much do you pay?

Don't risk needless waste

If all corrosion were as obvious as it is in steel pipe, industry would do more about it. But it is not. Often hidden or unnoticed – indoors and outdoors, above ground and below ground – corrosion takes its daily toll. Acids, alkalis, salts, gases and atmospheric conditions all are contributing factors. As a result, industry pays a terrific bill for corrosion – far more than it should. Your own cost, too, may be greater than necessary. Minimize your risk – do these two things now –

1. Check up on your costs;
2. Provide adequate protection for danger points.

Experienced and competent AMERCOAT engineers are available to help you on both. They'll check up on your costs, which may be greater than you know because the effects of corrosion are often hidden. They'll report on conditions as they find them. They'll recommend steps to take if greater protection can be provided and money saved. Inquiries from interested executives will receive prompt attention. There's no obligation – write today.

AMERCOAT DIVISION
AMERICAN PIPE AND CONSTRUCTION CO.
Dept. 3T, 4809 Firestone Blvd., South Gate, Calif.

Pointers FOR SUPERVISORS

Herman Burns Asks His Supervisors

By JOHN M. SCOTT, Jr.
Director of Industrial Relations, Rocky Mount Mills

"Boss, suppose we ask our own supervisors about this problem?" Jim Langley, general superintendent of a cotton mill, was having one of his regular talks with the general manager, Herman Burns. The old problem of supervision had come up again, and as usual the discussion had been going in circles, getting nowhere.

"Now, wait a minute, Jim. Do you mean to suggest that our own supervisors can tell us what kind of supervision we need? Wouldn't they just tell us to double their pay, retire them at 50 on 500 a month, and let it go at that? I try to be a reasonable man, but aren't you letting all this talk about better personnel relations queer your thinking? Why the biggest part of your job and mine is keeping those fellows straight."

"Well, boss, what you say about wages is true. Money means a lot to them just as it does to me and you. But maybe money has made us blind to other important things. Maybe there are some improvements we can make that won't cost us a dime. Anyway, it can't hurt to give it a try."

"Oh, all right, Jim; go ahead and make a start. I might as well give in now, because I can see you've got your heart set on it. But don't let this thing get out of hand; knock it off at the first bad sign. By the way, how do you propose to do it?"

"improvements . . . that won't cost us a dime."

"It's not going to be easy, Mr. Burns. The easy way is the old method of firing those we don't like, hiring some more to replace them, and so on until pure chance gives us what we want. Of course you and I don't like that way. We know how many heartaches, as well as headaches, that can cause. Despite what has been said of the callous way some mills swap supervisors at the drop of a bobbin, you and I know the weeks of personal torture a mill manager goes through before even an incompetent supervisor is removed.

"First, you and I have a job to do. I have to convince our men that we really need their help, that we are sincere. Then I've got to get them to talk. They'll tell me how they feel about you and the rest of our team. But, hard as it is to face, maybe there are some things about the way I run my job that could be improved. To get that information, I'll need some help.

"It would be nice, boss, if we had a full-time personnel man to do the whole job. We've discussed that and decided we can't afford one because of our size. Preacher Johnson knows most of our boys, though; they trust him, and he's a good listener. I'm going to ask him to meet with them once or twice. To make sure he isn't embarrassed by what he may hear I'm going to ask him to report to you. You can sift fact from fancy and let me know what needs to be done.

"I'll begin by meeting once a week with our top supervisors," Jim continued. "They will probably talk about the biggest problem on their minds at the moment. My job will be to keep them on the subject and draw them out until there is general agreement. We won't have any formal list of things to talk about; we'll just let a topic develop informally. That way may take a lot of time but will give us the advantage of their keenest and most heated opinions on the subjects."

". . . ask him to meet with them once or twice."

"That much makes sense, Jim," the manager interrupted; "you might get some interesting material. As I see it, however, you've got to have some plan in mind or they'll be talking about everything except improved supervision."

"You're right, Mr. Burns; we do need a goal to shoot for. What would you suggest?"

"This approach is so new," Burns was thinking out loud, "I hardly know. It strikes me we should keep it as simple as possible. There are only two parties involved, the company and the supervisors. If you cover what each wants of the other, haven't you got two simple objectives? First, get them to tell you what they expect of the company. That will give us a quick answer as to how far we can carry this idea. And they should be more inclined to open up on their own needs first. After that, they should be more realistic about what the company should expect of them. Doesn't that give you two simple subjects: what they want from the company and what the company wants from them?"

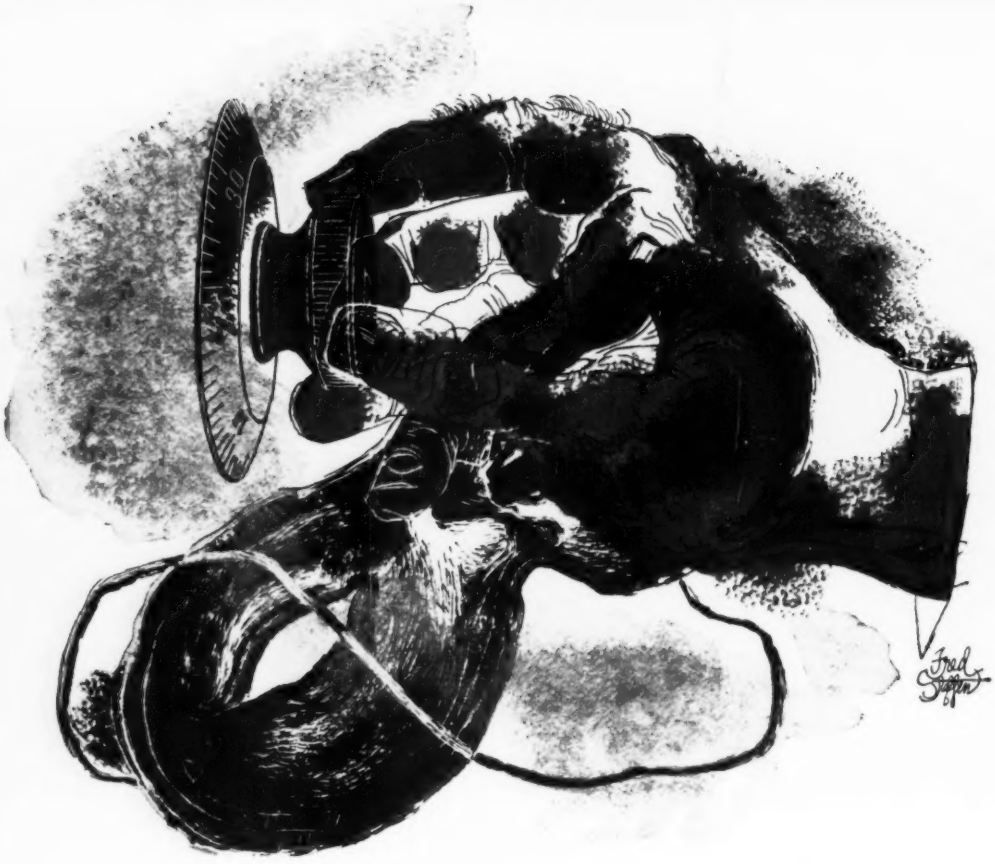
". . . whatever we agree to should be written down."

"Boss, that sounds like a good approach. I'll try it that way. Do you have any other suggestions as to details of making the plan work?"

"Yes, Jim; I think whatever we agree to should be written down. I know our supervisors don't like paperwork, and I realize conditions change in time. But we can keep it from sounding like a legal document and if we put it in loose-leaf binders it would be easy to change. It seems to me that putting it in writing will be proof of our sincere purpose."

"All right, Mr. Burns. I'll have my secretary meet with us to keep notes. She can mimeograph our decisions for alterations and final approval. Then we can get some small loose-leaf binders from the dime store so everybody will have a permanent reference. You can be sure that what we write down will be simple and to the point. I used to work for a big company that had a Works Manual put out by a desk jockey in New York. It took up two feet on my book shelf and covered so many details I often felt

(Continued on page 214)



Is this PRODUCTION THIEF at work in your plant?

He works in thousands of plants—choking, stifling and slowing machines, upsetting schedules—costing industry untold sums of money that *can* be saved!

You may not think he's at work in *your* plant, but it will pay you to have a look—the sooner the better.

For example . . . here are some places to look.

Are the grease guns in your plant still filled by old-time "paddle" methods—wasting time, wasting grease, risking contamination and dirt? You've caught a suspect!

You can save 3¾ man hours for every 100 lbs. of grease and eliminate contamination risks.

Is the "man power cost" of your present lubrication method away out of line? Is it a hit-or-miss method? There's a production thief!

There is a way to save up to 23.9 man hours in applying each 100 lbs. of grease!

What about production losses from time-out-for-lubrication? What about repair and replacement costs for the parts that failed? More thievery!

You can lubricate hundreds of bearings from one central point, with the right grease in the correct amount—while the machine continues to produce!

Got an idea there may be a "production thief" in *your* plant—in the guise of faulty and costly old-time lubrication methods?

There's one proven way to stop this loss.

An Alemite representative can tell you in 10 minutes how Alemite Methods will simplify and better organize your lubrication procedures. He can show you how mechanized lubrication from barrel-to-bearing will increase your production and profits.

Use the phone. Call your Alemite Distributor. Or write to Alemite, 1888 Diversey Parkway, Chicago 14, Illinois.

ALEMITE

MODERN LUBRICATION METHODS THAT CUT PRODUCTION COSTS

Alemite Product of STEWART WARNER

MUDDLING in High Places

It is time for men in Washington and London to stop toying with the problem of international trade. We of the democratic West are at a turning point in our economic affairs. A false step by either the United States or Britain could lead quickly to disintegration of trading between the people of the world as we have known it for the past hundred years. Recent meetings of diplomats in London and Washington have not lifted us out of this danger.

By two simple tests you and I can measure the sincerity of the men in Washington and in London who are trying to solve what they call "the dollar crisis."

One test applies to the British: Is Britain making an honest effort to re-establish itself as a real competitor in world markets?

The other test applies to us in the United States: Are we willing to see Britain re-emerge as a strong competitor in world markets—even in our own home market—and to help her do so?

Today, even though both countries have faced the devaluation test, the answer to these questions probably is no.

I

The situation we face is, in fact, unprecedented. In every important industrial country of the non-Communist world, except Germany and Japan, production is above prewar volume, thanks largely to the Marshall Plan. Yet trade between nations is shackled as it has never been since the 18th century. And the shackles grow day by day. What is worse, two distinct trading areas—the dollar area and the sterling area—have grown up in the non-Communist world, and the gulf between them grows wider.

What kind of leadership have the United States and Britain had in the face of this crisis? President Truman late in August wisely checked the trans-Atlantic bickering over the dollar crisis. *But Mr. Truman showed no awareness of the basic question that the American people must soon decide: Is the United States able and willing to generate trade between nations, as Britain did in the 19th century?*

What have British leaders offered us? Foreign Secretary Bevin and Chancellor Cripps called their September visit to Washington "one of the most important missions in history." *But they did not tell the British people, and perhaps do not admit themselves, that their Labor government must change its internal and external policies if Britain is ever to earn its living in a competitive world.*

Admittedly, the problem Britain has faced since 1945 is a colossal one. But, in the face of its grave difficulties, what has Britain done? The working day was shortened. Welfare economics have run riot. High taxes have sapped incentives. Labor and capital have clung to their prewar psychology of cartels and featherbedding. Government controls and government trading have hamstrung private initiative. Nationalization schemes have injected politics into the struggle for industrial recovery.

Thus the policies of the Labor government have made Britain's adjustment to its new position in the world immensely more difficult. But Americans who attribute the danger of an international breakdown to British socialism greatly oversimplify the problem. Virtually every country in the world, socialist or not, faces the same dollar crisis that Britain faces.

continued on next page

We Americans must recognize that our economic strength unbalances world trade as does Britain's weakness. World War II increased America's superior power to produce goods. It also made the United States more self-sufficient. Thus, while the world demand for American goods has risen, our demand for foreign goods, except for basic raw materials, has not increased. Today we sell more to every major area of the world than we buy from it—and yet we wonder why there is a dollar crisis.

It is time for us to recognize that there are two fundamentally conflicting pressures at work in the United States. One is our desire for a big surplus of exports over imports. The other is our desire for a system of free-wheeling trade around the world. We can not have both unless we as taxpayers wish to subsidize our exports. Which do we want?

Curtis E. Calder, chairman of the International Relations Committee of the National Association of Manufacturers, says, "The battle of the foreign trade gap is essentially that of reconciling our urge to export our surpluses with a reluctance to accept imports in payment for them . . . The dilemma is an uncomfortable one to face."

II

Here, then, are the basic questions that confront men in Washington and London. Does Britain really want expanding world trade or a high-cost welfare state? Does the United States really want expanding world trade or a huge surplus of exports? So far politicians in Washington and especially in London have ducked these issues because they are political dynamite.

If the people of Britain decide they want to regain their position as a competitive trader in expanding world markets, here are specific objectives that men in London should set for themselves:

1. Lower government costs. The British Treasury has asked for cuts of 5% in 1950. But a cut nearer 15% will be necessary, even if that means fewer government subsidies and health services. Enterprise will never revive nor costs come down while taxes take 40% of the British national income, including roughly 60% of business profits.

2. Fewer government controls. Only by removing controls and allocations (except on a few necessities) can Britain begin to return to prices fixed by competition rather than by government fiat.

3. Stronger anti-monopoly legislation for both business and labor. Britain needs a concerted drive against all forms of restrictive, high-cost practices. This drive should put teeth in the anti-monopoly act and supplement it with legislation to end restrictions imposed by trade unions.

4. Less restrictive trading practices. Britain should retreat gradually from its international barter between governments if competition is ever to have free play in international trade.

Meanwhile, if we of the United States sincerely want multilateral world trade, men in Washington must face up to four problems and hammer out workable solutions:

1. Use of the International Monetary Fund to back a devalued pound. In time the Fund, in which we have the controlling voice, might be used to promote convertibility of pounds into dollars.

2. Help for Britain in meeting war-created external debts. This might mean support for London in getting a reduction of the war debts Britain owes India, Pakistan and Egypt, for example. To achieve such a debt reduction for Britain we might have to underwrite a part of a Southeast Asia recovery program.

3. Encouragement of American investments abroad. Such investments should be directed primarily into enterprises which will earn dollars, such as the development of new sources of raw materials, or which will raise productivity abroad.

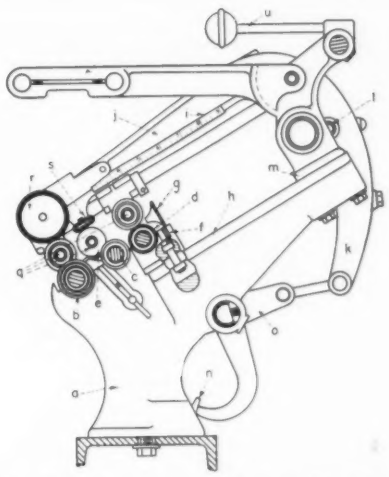
4. Our own tariff barriers. Our attitude toward this critical issue will be the acid test of how deeply we believe in the merits of free world competition.

If we really want free, competitive trading between the people of the world, these issues must be met and resolved by leaders on both sides of the Atlantic. If we do not want to face these issues, then let us resign ourselves to a world walled off into three trading areas: the Communist bloc, the sterling area, and the dollar area. So far, Washington and London have muddled along, except in facing the devaluation problem. Clarity and courage are still needed.

President, McGraw-Hill Publishing Company, Inc.

TEXTILE Equipment NEWS

Worsted Spinning System Uses New Drafting Assembly



Built-In Flexibility Features New Drafting System

a — ROLL STAND *a* is made of die-cast metal and is designed to withstand severe loading by pressure on top rolls.

b,c,d,e — BOTTOM ROLLS *b,c,d,* are made of case-hardened steel with special fluting and are mounted in antifriction bearings with sealed-in lubricant. Spacing of first and second bottom rolls and apron bar *e* is not adjustable. Second bottom roll *c* is constructed to obtain a broad and yielding control over fibers. Fibers passing through the zone are relieved of any definite bite, although inter-fiber friction is retained, causing a smoothing and grooming of the fibers.

f,g,h — BACK BOTTOM ROLL *d*, together with traverse bar *f*, and roving guide *g* are adjustable along splineway *h* which allows regulation of spread of rolls.

i,j — BUILT-IN GAGE *i*, permanently fixed to upper arm *j*, permits exact setting of rolls, eliminates use of leaf gages. Horizontal portion of upper arm *j* replaces cap bar and nebs.

k,l,m — ARM *k* is built in form of bell crank pivoted at pin *l* which is supported on the roll stand by bearing piece *m*. Vertical section of bell crank is hollow and contains a strong, calibrated spring which creates pressure on the top rolls. Pressure on front and back rolls combined is adjustable from 40 to 200 lb. A gage permits setting pressure to definite and uniform degree. The pressure, once set, is said not to change even when rolls are removed and replaced.

n,o — HANDLE *n* attached to bell crank *o* permits relieving of pressure on spring quickly and easily.

q — TOP ROLLS *q* are mounted in antifriction bearings supported by arbors attached to horizontal arm. Arbor for third line of top rolls is movable.

r,s — TWO CLEARERS, a revolving plush roll *r* and a small flat clearer *s*, make up the clearer system.

t — FLYER SUPPORT *t* is used to place flyers on during doffing of the roving frame. When not in use, support can be moved to vertical position.

u — NEW SHIPPER ROD *u* is easily accessible and easily cleaned. Design of the rod permits precise jogging of the frame.

A NEW FIVE-STEP METHOD for producing worsted yarn from top has been developed by Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass. The system eliminates use of conventional cans, cap bars, and nebs, and introduces a new ball creel and drafting assembly.

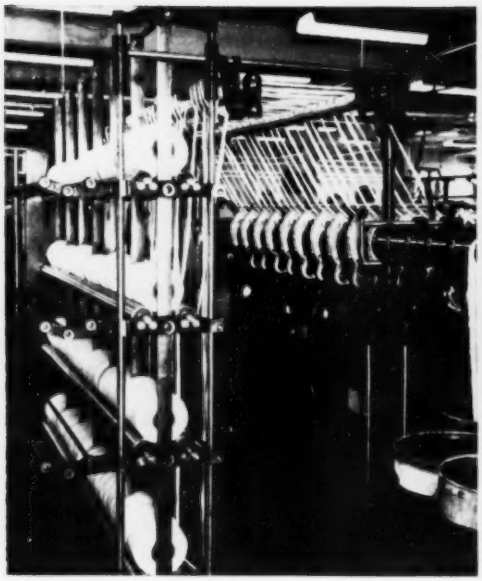
Two methods of processing are available. For wools up to 6 in. in length, a pin drafter (or similar gilling unit) is used, followed by two passages of 3-over-4 drawing, a single passage of roving (or possibly two), and spinning. For wools over 6 in., three passages through the pin drafter (or similar gilling unit) are recommended, followed by roving and spinning. In this latter method, drawing is eliminated.

Pin drafters and drawing frames deliver to balling heads instead of to cans. At the second gilling operation and at the roving operation, ball creels, closely coordinated with the receiving unit, deliver stock under even tension and at a controlled rate which can be easily adjusted.

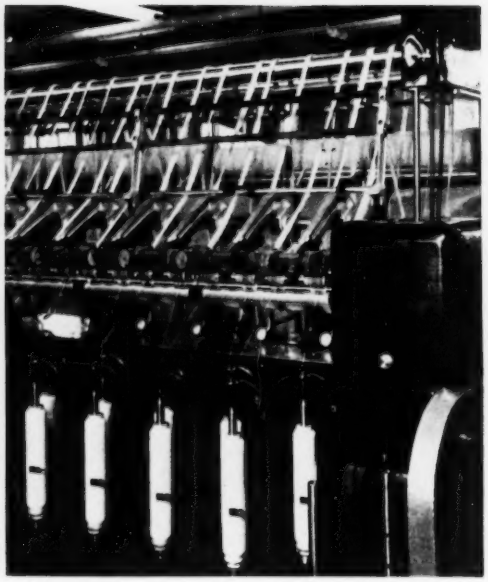
The Model DS drawing frame is used as the final pre-roving operation for wool stocks with fiber length under 6 in. The frame can be used in two stages, breaker and finisher, always followed by a pin drafter or similar gilling equipment. Objectives of the drawing process are to secure doublings, to complete blending, to attain parallelization of fibers by drafting under effective control, and to produce a sliver suitable for efficient drafting at the roving frame.

As slivers emerge from the front roll of the drawing frame, they come in contact with a static bar which neutralizes any charge developed during drafting. The web then enters a new upper trumpet. This upper trumpet is connected with the stop motion and prepares the sliver for entrance into the lower trumpet which completes condensation of the sliver. From the calender roll, stock passes to the balling head.

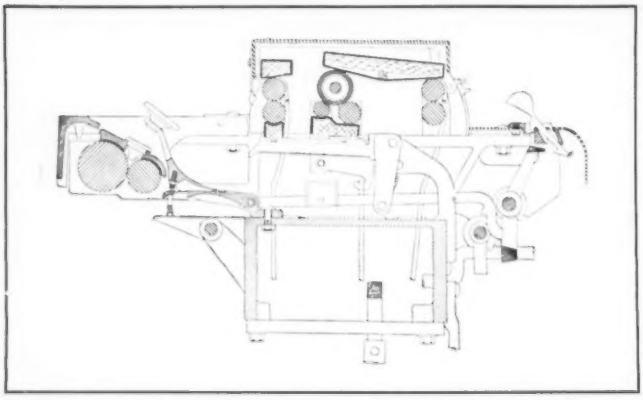
An entirely new drafting assembly,



BALL CREEL used to feed drawing and roving frames is geared to production rate of the machine, holds tension even.



BELL-CRANK ARM holding top rolls has spring-weighing device and eliminates cap bars and nebs.



DS DRAFTING SYSTEM *is used in drawing frame equipped with balling head. Large middle top roll rests on third bottom roll but is separated by only 0.03 in. from smooth-surfaced second roll. Exceptional fiber control is said to result. Note two condensing trumpets.*

Type 4, is used on the roving and spinning frames. The Type 4 unit is designed for maximum flexibility. With a simple adjustment, rolls can be set to operate efficiently within the full range of commercial wools, the company states. The system is also so designed to eliminate cap bars and nebs, and to be spring weighted. Details of the system are shown in the panel on the previous page.

While roll settings are not overly critical with the Type 4 drafting assembly, adjustment of rolls is important. One of the best settings so far discovered is a spread between front and back roll slightly less than the longest staple in the stock. As a result of the strong roll pressure possible, drafting is said to be accomplished so that a more even distribution of fibers in the strand results, as well as a more even yarn.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-135.

Compressible Lubricant Exerts Its Own Pressure

A lubricating compound which is both compressible and expansible, designed primarily for use in pressurized plug valves but available for thousands of other potential uses, has been developed by Rockwell Mfg. Co., 400 N. Lexington Ave., Pittsburgh 8, Pa. Called Hypermatic, the compound has dynamic properties whereby energy may be stored for prolonged periods to make feeding action automatic.

Therefore if a lubricated plug valve, of the Nordstrom type, should ever "spring" a leak, the automatic force-feed action of Hypermatic instantly seals the void. If the valve has been neglected, it keeps itself in a state of 100% lubricated condition and remains energized. Pressure does not quickly decline but may remain for months.

In a lubricated plug valve, lubricant is used for three purposes: (1) to maintain a film on the unexposed seat to permit easy turning of the plug, (2) to form a pressurized seal around each port by the use of connected grooves on the plug and within the body, (3) to act as a hydraulic jack to raise the plug slightly off its seat if the plug ever becomes hard to turn. Lubricant is introduced into the valve through a hole in the shank of the plug. Sticks of lubricant are dropped into the hole and a lubricant screw is inserted, which, when turned, exerts powerful

The Right Product AT THE RIGHT TIME

SONOCO Department of Research & Development

Above—View of Engineering and Development Department and below Yarn Tension Testing Equipment.

The SONOCO Laboratory is unique in that its work in several industrial fields such as paper, textiles, paint, dyes, lacquer, synthetics is all necessary in the control as well as development, of SONOCO products . . . No item in the SONOCO line is static and customer problems are constantly being met and solved in the SONOCO Laboratory. For over 50 years SONOCO has met every stage of development in the textile industry pertaining to paper carriers, with the right product at the right time.

Heat Treating Equipment used in Research and Development Department.

Everything in Textile Paper Carriers

SONOCO PRODUCTS COMPANY

BRANTFORD ONT | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

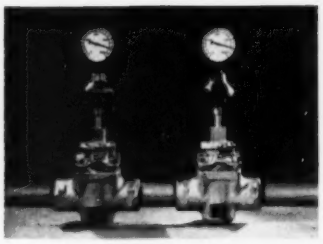
hydraulic force to transmit the lubricant through the channels. But this force deteriorates in case of leakage. Hence, constant pressure is desirable so that pressure at any level will effectively push the necessary amount of lubricant into the void.

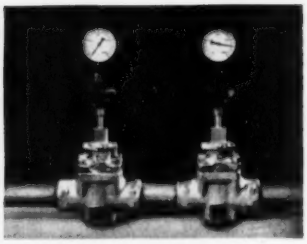
Hypermatic is the "missing link" to effect automatic action. Being compressible, from 50 to 100% more can be inserted and stored for future use. Turning of the lubricant screw builds up the energy similar to the action of a door check which stores energy to automatically close the door. High amounts of pressure can be built up within the valve, but the lubricant will actuate with a pressure of as low as 50 lb. In very high-pressure service the energy is built up to 1,000 lb. and higher. The lubricant is self-feeding even though the line pressure is greatly in excess of the internal lubricant pressure of the valve.

Hypermatic is volumetrically flexible; self-sealing, self-acting. Less lubricant can be used because the operator neither overlubricates nor underlubricates the valve. When pressure is finally exhausted, Hypermatic functions the same as a non-energizable valve lubricant, but by again turning the lubricant screw a few revolutions or by replenishing the supply of sticks (or by use of pressure gun), re-energization takes place.

More than 75% of Nordstrom valves now in use are immediately receptive to this lubricant on temperature lines from sub-zero to at least 250° F. Tests are now being conducted to increase the temperature range. The manufacturers of Nordstrom valves claim that savings of many million man-hours per year will be made by its use, without present users investing a cent in equipment because re-lubrications will only take a fraction of time previously consumed by maintenance men.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-132.

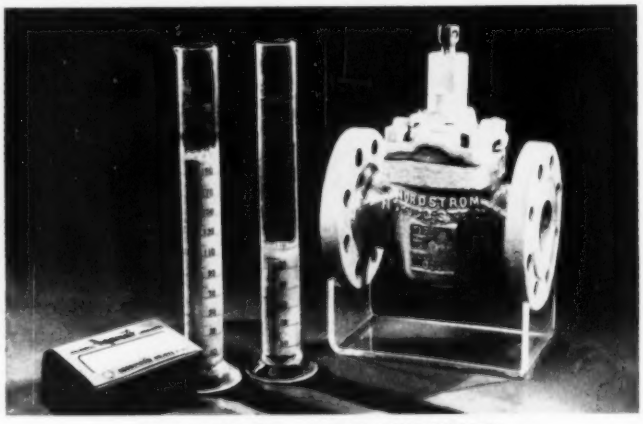




LUBRICANT PRESSURE HELD OVER SIX MONTHS

VALVE AT LEFT was pressurized at 350 psi. with non-energized lubricant on a test line. Valve at right of identical type is pressurized to 350 psi. with automatic energized lubricant.

SIX MONTHS LATER pressure of non-energized lubricant in valve at left has dropped to 0 psi. Pressure of energized lubricant in valve at right shows negligible decline.



SAME SPACE — MORE LUBRICANT

BECAUSE OF COMPRESSIBILITY of new lubricant, amounts of lubricant storable in a plug valve are different. The beaker next to box shows volume of Hypermatic automatic lubricant storable; the beaker next to valve shows volume of non-compressible, non-automatic lubricant storable.

Worsted High-Draft System Adaptable to Any Frame

The Ambler system, a revolutionary system of drafting in which drafts of 100 are said to be easily available has been developed in England. [TW, Aug. '49, p. 165] The system will be available through Prince-Smith & Stells Ltd., Keighley, England. The system can be adapted to any type worsted-spinning frame, ring, cap, or flyer, regardless of the size of rolls or length of ratch presently used.

The Ambler system is designed to save drawing costs by the use of much heavier roving, and to reduce spinning costs by reducing the cost of creeling to a negligible amount. A typical layout for spinning any counts, using the Ambler system, would be: first and second intersecting gills, 4-spindle draw box, 8-spindle draw box. Either the 4- or 8-spindle machine could serve as a weigh box. Four drawing processes only are required. The expensive reducing and roving operations are eliminated. In spinning, spindles can be run at any speed the spindles and material will stand.

The Ambler system uses back bottom rolls with a fairly deep groove into which fit disk-like top rollers. The back traverse motion has been discontinued. The drafting apparatus is located between these new back rollers and the ordinary front rolls. It is contained in a lidless metal box about 3x2 in., and consists of two very small top and bottom rolls, about ¼ to ½ in. in diameter. These rolls have an 8% lead over the back rolls and grip the roving or slubbing and feed it into a condenser, called the "flume." This condenser is V-shaped, but it has a blunt rather than a pointed tip. The condenser has a fine opening at the nose. The function of the flume is to carry the slubbing and to present it to the nip of the front drafting rolls. The conventional traverse motion located behind the back rolls has been replaced by a traverse mechanism that acts on the entire aluminum control-drafting box.

Carrier rolls are eliminated. The only difference in the draft train is the addition of a second double draft stud. This addition was necessary to

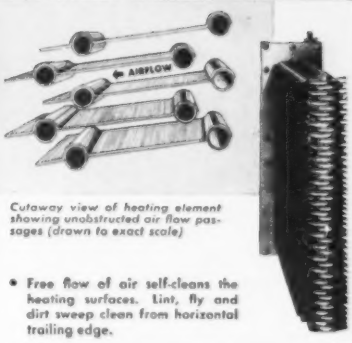
More economical maintenance... More efficient heating!

with the self-cleaning

TEXTILE THERMOLIER

Incorporating all the features that have made the standard THERMOLIER a leader, the new TEXTILE THERMOLIER banishes the problem of clogging and loss of heating capacity, and cuts cleaning to almost nothing.

TEXTILE THERMOLIER proved its superiority in this actual spinning room test. A conventional unit heater clogged solid in four days . . . its heating capacity was lost as clogging increased. Finally it had to be shut down for a prolonged cleaning period. After three weeks of operation, TEXTILE THERMOLIER showed negligible accumulation . . . it was quickly cleaned with an air hose.



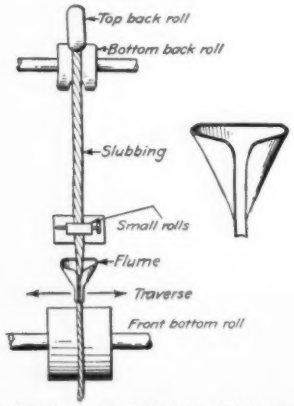
Cutaway view of heating element showing unobstructed air flow passages (drawn to exact scale)

- Free flow of air self-cleans the heating surfaces. Lint, fly and dirt sweep clean from horizontal trailing edge.
- Maximum capacity provided at all times and annoying and destructive water hammer eliminated because built-in pitch of tubes and internal cooling leg assure continuous drainage of condensate.
- Safety and durability assured with leak-proof tube-to-header construction.
- Plain thermostatic trap, the simplest and least expensive kind of trap, made practical because of Thermolier's exclusive internal cooling leg. Write for the full story.

99 YEARS PIPING

GRINNELL

Grinnell Company, Inc., Providence 1, Rhode Island. Branches: Atlanta • Buffalo • Charlotte • Chicago • Cleveland • Cranston • Fresno • Kansas City • Houston Long Beach • Los Angeles • Milwaukee • Minneapolis • New York • Oakland • Philadelphia • Sacramento • St. Louis • St. Paul • San Francisco • Seattle • Spokane



TWIST IS MAINTAINED during drafting and is used to control fibers in Ambler system.

enable mills to use their available draft change gears and yet make the back rollers rotate slowly enough to take advantage of the high-draft ratio, which is the basis of the Ambler system. An important setting is that of the flume ratch, which is the distance between the tip of the flume and the nip of the front roller. This setting is made mechanically by turning a handle located under the roving pegs about the middle of the frame, easily accessible and under full view of the operator.

By precise mathematical calculation, charts have been established by which the proper setting of the flume may be found for various counts and qualities. The readings have been established in decimals of inches.

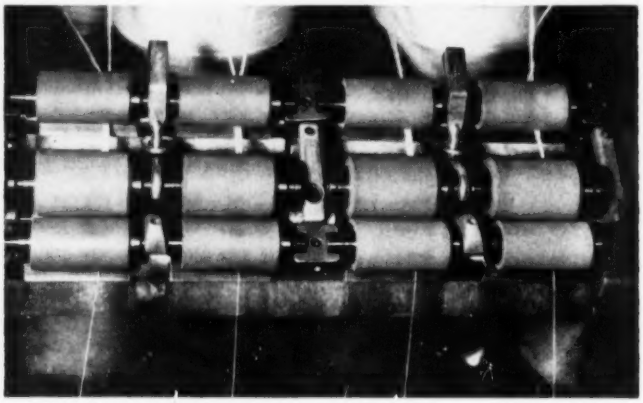
For example, to spin a 30s worsted, 64s quality, a draft of 37 was required. The chart showed a setting of 0.75 in. for the flume. A counter disk is mounted on the frame, and by turning the handle which controls the ratch setting until the reading of 0.75 appears, the proper setting is obtained and no measuring is necessary. Draft and twist gears are changed in the conventional manner.

Drafts of 100 can be easily obtained, and TEXTILE WORLD's correspondent claims to have seen a 52s worsted count being spun with a draft of 105 without difficulty and with excellent results. The amount of twist contained in the slubbing is of paramount importance. Instead of mechanical fiber control, the Ambler system advocates the use of the twist in the roving as a means to control fiber movements in the drafting period. The Ambler system is designed to retain the twist during drafting. Bringing ends down is very easy, and the absence of carriers is said to make laps between back and front rollers non-existent. The following factors are said to assist in maintaining fiber control:

1. Correct ratching.
2. The manner in which the new type of grooved feed rolls hold the meche and prevent the twist from running out.
3. The necessary correct amount of twist in the meche.
4. The lead and grip of the tiny take-up rolls in the box, which guard and keep in the twist throughout the spinning operation.
5. The dimensions and aperture of the flume which keep the twist under control right into the nip of the drafting rolls.
6. The correct setting and distancing of the flume to the back roll.
7. Having the correct slubbing weights suitable to the flumes, back rolls, and tiny lead rolls.

The Ambler system was developed by Air Vice Marshall Ambler, a director of Fred Ambler Ltd., Yorkshire, England. The Yorkshire firms of Fred Ambler Ltd.; W. & J. Whitehead Ltd.; Downs, Coulter & Co., Ltd.; and Reuben Gaunt & Sons Ltd., shared in the research work that has been carried on since 1946. The mathematical calculations on which the Ambler system are based are the work of Miss D. M. Hannan of Cambridge University.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-110.



FREEDOM FROM LINT can be clearly seen on long-draft frame equipped with three lines of S-L-T needle-bearing rolls.

Pre-Lubricated Rolls Credited With Improving Yarn Quality

Needle-bearing top rolls, designated S-L-T, which reduce roll picking and staining of stock by oil are now said to have been perfected. The results have been achieved through joint study and research over ten years by the Torrington Co., Torrington, Conn., and Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass., and are available from either company. Satisfactory performance has been reported from the more than 250,000 of these rolls now in place.

Use of the rolls on roving and spinning frames is said to reduce lubrication to once every time the frame is overhauled. Roll picking and tight windings of waste around roll arbors is reduced considerably. Variations in yarn size due to uneven drafting as a result of improper lubrication of top rolls is eliminated.

The needle-bearing top roll is built around a sturdy one-piece arbor which is heat-treated for both rigidity of the roll and hardness of the surface on which the needle bearings operate. The needle bearings are inclosed in a cartridge assembly which includes a lubricating reservoir. Labyrinth seals prevent leakage of lubricant and entrance of fly and dirt.

There is no need to dismantle this unit assembly. No adjustments are necessary, and leak-proof seals are permanent. All rolls are pre-lubricated at the initial assembly. Shop tests have indicated that the initial charge

how to —

save 4 hours

preparing vat pastes

Photo courtesy of AMERICAN VISCOSE CO.

Elapsed time? One-half hour instead of 4 to 5 hours required by cook-up thickeners!

How?

By eliminating cooking and cooling. Simply blend vat chemicals and tap water with AMBERTEX M. That's all. Your printing thickener is ready to use.

You save time . . . labor . . . expensive cooking equipment.

AMBERTEX M is another example of the *service* National research builds into textile starch specialties: Expense saving ease-of-preparation, in addition to excellent printing qualities.

AMBERTEX M is especially recommended for white discharge, rapidogen and vat colors. Clean, high speed printing . . . excellent penetration . . . smooth uniform blotches . . . washes out easily and thoroughly. Color yield? Up to 20% higher! AMBERTEX M deposits a soft, pliable film that minimizes splitting on Bemberg sheers and similar materials.

National also produces: CLEARFILM for sheer, lustrous finishes; FLOTEX to replace natural gums for printing; TABLE ADHESIVE for screen printing; FLOCK ADHESIVE 970 for chenille flock printing; HOOSIER PEARL CORN STARCH . . . THIN BOILING CORN STARCH . . . CHLORINATED CORN STARCH . . . and DEXTRINES

Address: 270 Madison Ave., New York 16; Boston, Philadelphia, Atlanta, Indianapolis, Chicago, San Francisco, and other principal cities. *In Canada:* National Adhesives (Canada) Ltd., Toronto and Montreal.

National
STARCH PRODUCTS

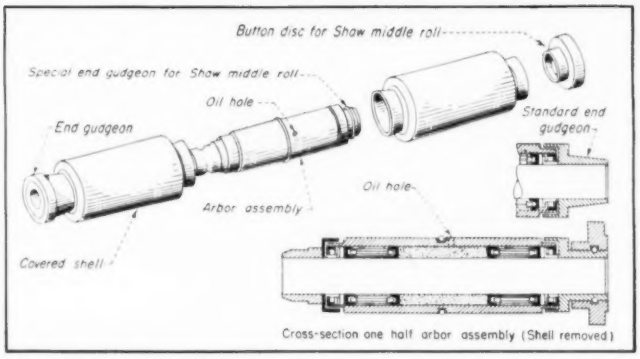
ambertex-m

ELIMINATES COOKING AND COOLING

of lubricant is sufficient for 15,000 hr. of operation. Provision, however, is made for easy lubrication. It is recommended that rolls be lubricated when frame is down for periodic scouring or overhauling. This method involves no additional lost operating time for roll lubrication.

Arbors and shells are fully standardized and are interchangeable. Shells may be removed for recovering or rebuffing and replaced with others. The snap rings used in the construction permit easy removal of shell. Rings are so designed that it is impossible to assemble the shells on the arbors in the wrong manner or to move the shells past their proper position.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-130.



CONSTRUCTION of needle-bearing top roll is simple, sturdy. All arbor parts are held in correct adjustment by leakproof seals.

Rayon Finishing Processes Combined into One

A new continuous preparing and bleaching unit combines several synthetic-fabric-finishing operations into one, without tension. The machine has been developed by Hinnekens Machine Co., Inc., 199 Godwin Ave., Paterson 1, N. J.

The unit combines the processes of desizing (starch or protein), bleaching, scouring for dyeing, dyeing white or causticizing (saponifying); bleaching, scouring, and dyeing white for ground printing, into one continuous operation. Perfect control of the reaction of the chemicals employed is said to be possible, as well as the speeding-up of the actual reaction to approximately 30 to 40 sec. It is practically possible to apply a given amount of caustic to fabric to produce a definitely limited degree of caustication or saponification and decrease or increase it at will, the company states.

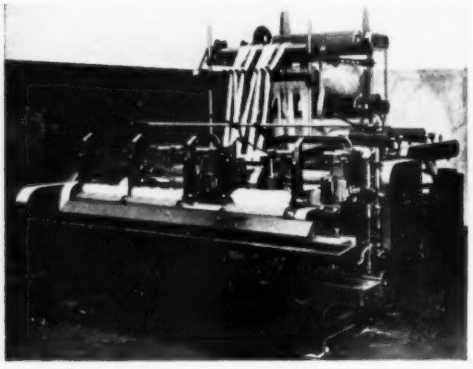
The unit can handle a wide range of fabrics: sheers, French crepes, 100-denier crepes, spuns, gabardines, butcher linens, and others. Fabrics are said to leave the machine in full width, desized, cleaned, ready for immediate dyeing, properly shrunk, and prepared without any undue stretch in length and width. Goods for printing on white ground need not go to the dyehouse for dyeing at all. A unit delivers them in full width to the scutcher and from it directly to the dryer, thus streamlining two additional operations with the above mentioned four, bypassing the dyehouse entirely. Natural silk fabrics treated on the unit, including a light scouring in soap, can be completely degummed within one-fifth of the time of the old method of degumming, it is claimed.

The operation of the unit, comprising three to five separate processes, requires only two or three easily trained men. Singeing can also be made a part of the operation.

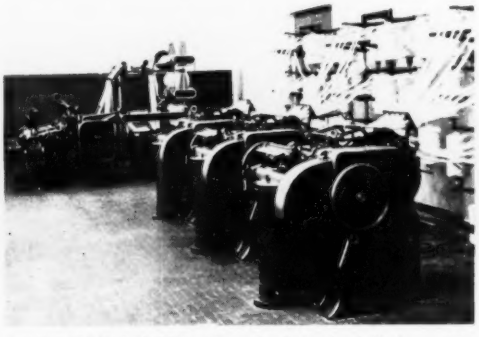
Production of the unit is said, over a period of months, to have come up to 40,000 yd. per 8 hr. Performance depends mainly on the weight of the fabric treated.

Merchandise processed on the unit shows an increased affinity for both dye and print colors, the manufac-

Recombing Unit Corrects Top Irregularity

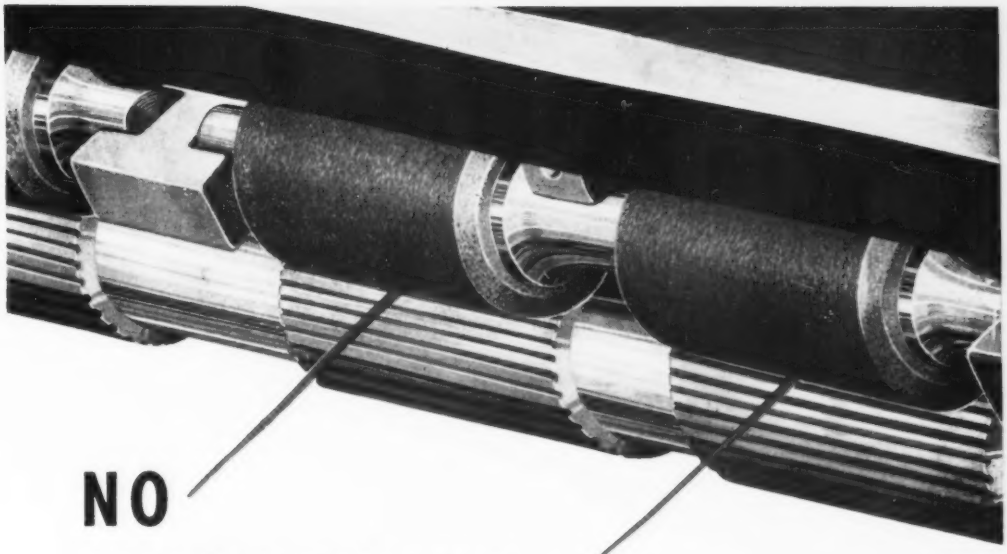


A RECTILINEAR COMB forms half a recombing unit for correcting unevenness or irregularities in different lots of top purchased for manufacture into yarn. The recombing unit is product of S. A. Officina Meccanica Sant' Andrea Novara, of Italy. U. S. representative is Ernest L. Frankl Associates, 22 E. 40th St., New York 16, N. Y. Delivery can be made almost immediately.



INTERSECTING GILL BOX with two heads is other half of recombing unit. Combination creel can take tops in ball form or out of cans. Need for recombing is said to be especially great in plants spinning American-system yarn.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-128.



NO EYEBROWING

when you spin on Armstrong's Cork Cots

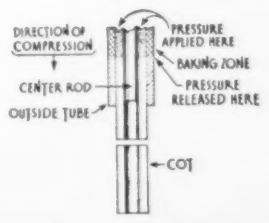
"They just don't eyebrow." That's what overseers and superintendents say about Armstrong's Cork Cots. That's what you'll say once you've tried them. Armstrong's Cork Cots are made with a high friction surface that packs loose fibers well back on clearers, so they can't eyebrow and cause slubs.

This same high friction surface grips fibers firmly and drafts a strong, uniform yarn. These cork cots also run cleaner. They reduce clearer waste as much as 50%.

Armstrong's Cork Cots are low in first cost. Spread this over a total life of two to three years with several rebuffings, and you'll see another reason why it pays to spin on Armstrong's Cork Cots.

Try Armstrong's Cork Cots on your frames today and let them prove themselves. Your Armstrong representative will gladly arrange a test installation. Or write the Armstrong Cork Company, Textile Products Department, 8310 Arch Street, Lancaster, Pennsylvania. Available for export.

EXTRUSION PROCESS PRODUCES SEAMLESS CORK COTS



Armstrong's Cork Cots have no structural weakness to cause premature breakdown. Each cot is uniform in density from inside to outside, from end to end. Each compresses evenly, spins stronger, more uniform yarn.

Better running work . . . more poundage

ARMSTRONG'S CORK COTS

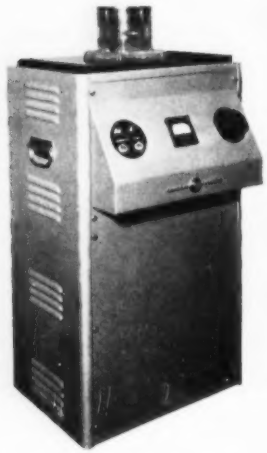
ACCOTEX COTS • ACCOTEX APRONS

turer states. The quality of workmanship is said to be excellent.

The cost of processing is very low as compared with the separate processing necessary heretofore.

The machine is approximately 65 ft., 4 in. long, with a curing unit 28 ft., 8 in. high. The balance of the machine is 3 ft. high and 8 ft. wide and can take care of fabrics up to 66 in. gray width.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-127.



COMPACT ULTRASONIC GENERATOR can be used in studies of dyeing, sizing, and cotton cleaning.

Ultrasonic Generator Aids Wet-Process Studies

A new ultrasonic generator, providing a simple and practical method for studying the effect of ultrasonic energy on textile materials and processes, has been announced by Special Products Div., General Electric Co., Schenectady 5, N. Y.

The generator converts high-frequency electrical power into high-frequency mechanical vibrations in the form of sound waves pitched considerably higher than the range of human hearing. A wide operating range is provided by four vibration frequencies: 300, 500, 750, and 1,000 kc.

Many possible applications in ultrasonic research are offered by the new instrument. Physically, the transforming of immiscible liquids into stable emulsions and the colloidal suspension of precipitates in liquids can be examined. Investigation into chemical reactions such as oxidation, hydrolysis, and reduction is possible with the new generator.

Entirely self-contained in a steel console, the equipment consists of a power unit and a transducer assembly. Simple controls mounted on the sloping front panel of the generator cabinet include On-Off switches for the high-voltage circuit and the filament circuit, a voltage control to vary the power, and an instrument which indicates the power supplied to the quartz crystal.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-112.

Dye Jig Holds Tension Nearly Constant

A new dye jig said to maintain fabric tension within close limits has been developed by Van Vlaanderen Machine Co., Paterson, N. J. Maintenance of tension, a feature desirable in dyeing nylon and other synthetic fabrics, is accomplished by a new drive.

The drive, a worm-gear type, is immersed in oil and separated by a partition from a dual friction clutch which operates dry. The new drive, along with antifriction bearings, is said to reduce drag greatly.

Other improvements in the new jig are: totally inclosed sprockets and chains sealed in oil for longer service and cleaner operating conditions, new overflow arrangement at sides to keep scum from fabric, quick replacement with the minimum loss of production of main-drive unit with a spare unit when necessary.

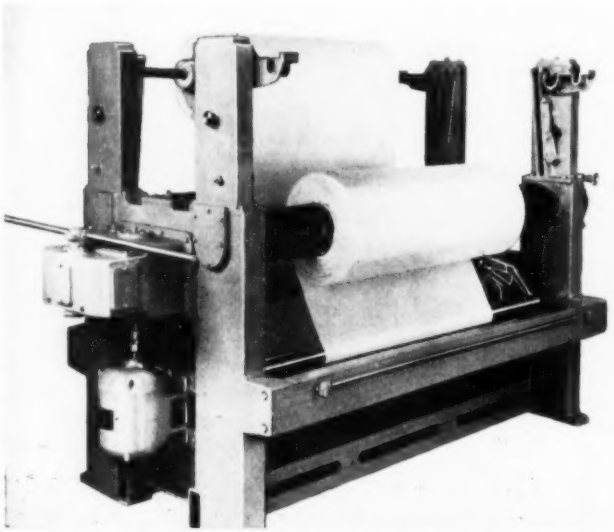
To request further information, please use the card on page C of the Reader-Service dept.; refer to T-111.

Thickness Measured By Lower-Cost Radiation Gage

The SM-3 Beta gage, a measuring and control instrument for measuring thickness of yarns, roving, and fabric coatings, is available from Tracerlab, Inc., Boston, Mass. The new instrument is designed for use in small production lines where initial cost must be kept low and in processes where manual standardization can be carried out without seriously interfering with production. (Another more elaborate gage of the same type was described in T. W., Sept. '49, p. 262.)

Essential components of the gage are a source of beta radiation from Strontium-90, and a radiation detector. Material to be measured is interposed between the source and the detector, and a part of the radiation is absorbed by the material in proportion to its weight per unit area. No physical contact is made with the material being measured.

For all practical purposes, chemical composition of the material being measured does not affect the calibra-



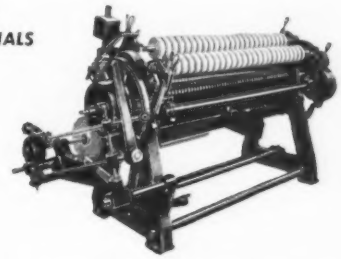
A NEW DRIVE UNIT and anti friction bearings in this new jig are said to help maintain the ideal tension for dyeing various synthetic fabrics.

Camachines

. . . for men with ideas

With more than twenty different models for the textile industries to choose from, Camachines offer a practical answer to every slitting and roll-winding problem. Illustrated below are four typical Camachines for men with ideas about increased production, improved quality and lower costs . . .

TACKY MATERIALS

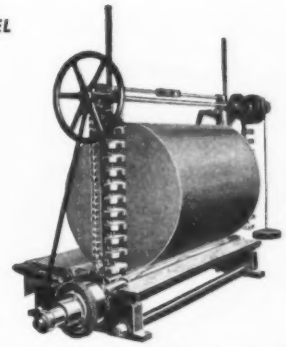


CAMACHINE 26-3A is especially designed for handling tacky or unevenly coated materials, such as adhesive tapes. Machine widths 26" to 56". Accommodates a 32" diameter mill roll. Rewinds rolls as narrow as ½", or up to 17¼" in diameter. Operates at speeds up to 400 fpm.

BIAS BINDING

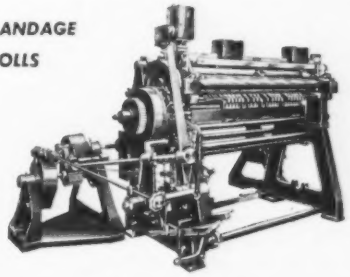
CAMACHINE 40-3L is the ideal machine for converting straight and bias binding fabrics (also specialty fabric) into strip in rolls. Machine widths 26" to 56". Accommodates material from roll, piece or fold. Rewinds rolls as narrow as ½", or up to 22" diameter. Speed up to 150 fpm from fold; higher from roll.

LOW MODEL WINDER



CAMACHINE 44-W low model winder operates in conjunction with processing machines as in bleacheries, fabric printing plants and bag factories. Available in machine widths from 32" to 82". Produces firm, uniformly rewound rolls up to 36" in diameter at speeds up to 1000 fpm.

BANDAGE ROLLS



CAMACHINE 40-4B, a semi-automatic machine for fast production of gauze bandage rolls. Machine widths 42" to 50". Accommodates 24" diameter mill roll. Rewinds rolls as narrow as ½", or up to 12" diameter. Machines come equipped with automatic stop for producing rolls of predetermined length.

Cameron Machine Company, 61 Poplar St., Brooklyn 2, N. Y.

WRITE FOR LITERATURE

Camachines

FOR FAST, TOP QUALITY ROLL PRODUCTION

. . . the world over

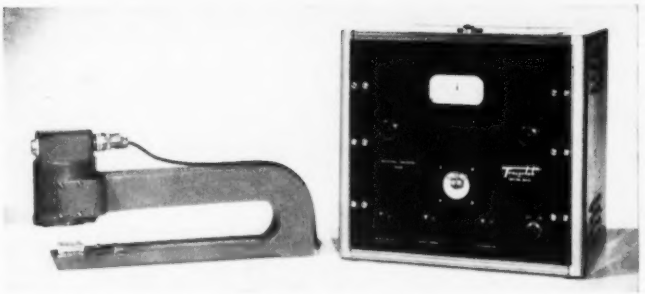
AA—188

tion of the instrument. The gage is comparable to a chemical balance in that it will provide the same information as is obtained by weighing on a balance a known area of the material in question. Moisture, clay, chemicals, etc., affect results only in proportion to their weight in the sheet.

The standardizing procedure with this model requires that the moving material be broken about once every 8 hr. while the instrument is balanced to compensate for various factors which may have caused it to drift. It will measure the weight per unit area of continuously moving material up to 700 mg/cm², and provide an indication when manufacturing tolerances are exceeded.

Adjustable indicators are provided on the Sensitrol meter mounted on the front panel so that the operator can set his manufacturing tolerances as a function of the Sensitrol scale. Positive or negative tolerances can be set; and, when these are exceeded, a flashing red light (positive) or a flashing green light (negative) appears. Simultaneously, 115 v. a.c., appears on one set of inclosed terminals on the back of the instrument if positive tolerance is exceeded, and on another set of inclosed terminals if negative tolerance is exceeded. The user can therefore wire in auxiliary warning or control equipment.

To request further information, please use the card on page C of the Reader Service dept.; refer to T-113.



WEIGHT PER UNIT LENGTH (or thickness) of yarn, roving, or coatings are measured by amount of radiation absorbed; information appears on illuminated 6-in. panel or instrument.

Loom-Motor Starters Have Overload Protection

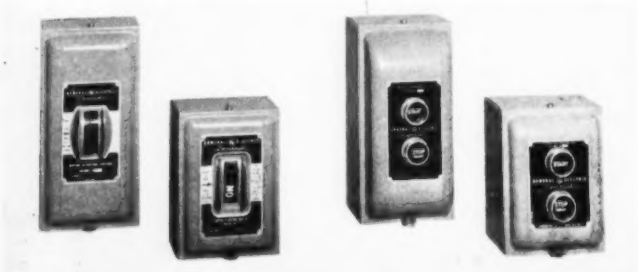
A new line of manually operated starters for a.c. motors up to 7½ hp. has been announced by Control Div., General Electric Co., Schenectady 5, N. Y. Introduced to complete the line of G-E starters of this type, the new starters are specially designed for use on looms, small pumps, blowers, and grinders.

Available immediately, the new starters are furnished in 2-, 3-, and 4-pole forms, size 0 and 1. The toggle-operated types in the above forms and sizes are also furnished, if desired, with cast-iron inclosures for use in wet, dust-laden, or hazardous locations. Renewal parts are available for all the new starters.

A feature of these starters is their bimetallic overload protection, which replaces the solder-pot relay and is designed to provide exceptionally accurate response to overloads. In addition, the starters are equipped with a wide range of heaters, all of which follow closely the motor-heating curve. Positive indication of overload trip is said to be assured by the toggle or push-button, which assumes a neutral position when the relay trips.

To prevent tampering, all starters in general-purpose enclosures can be padlocked; the toggle type can be padlocked in both the ON and OFF positions. All live parts are mounted on a strong molded base of high insulating quality. The heaters are inclosed in a cavity in the molded base, thus providing maximum protection to the operator in the event of short-circuit. The starters are easy to install and operate, and their sturdy construction assures long service, the company states.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-127.



MOTOR STARTING SWITCHES are available in toggle and push-button forms.

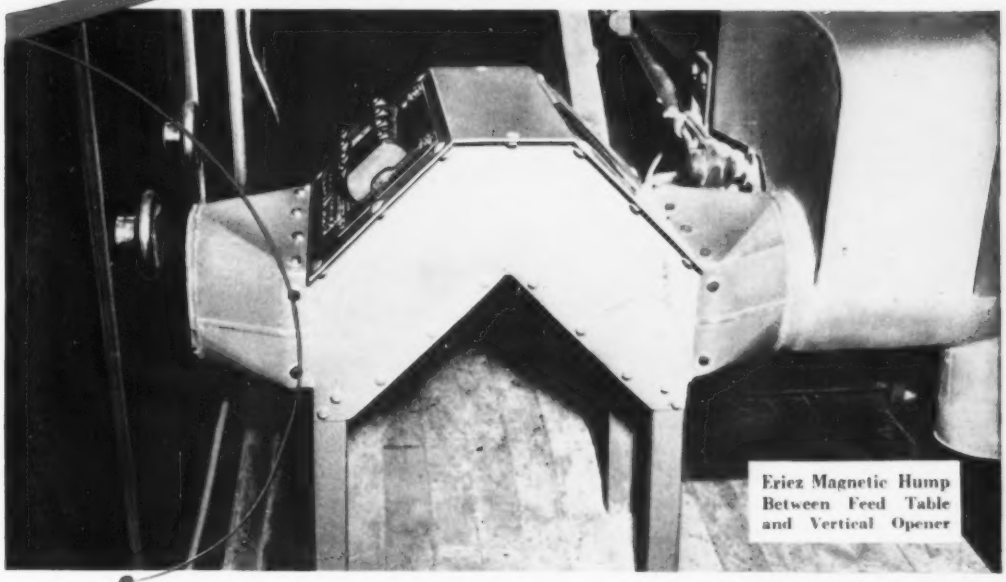
ACCURATE WEIGHING of samples in 25 sec. without handling weights is said to be possible with this balance.

Single-Pan Balance Cuts Weighing Time

Weighing samples for moisture content, etc., to 1/20 of a milligram with analytical-balance accuracy, but in one-third the usual time, is said to be made possible by a new direct-reading instrument called the "Gramatic" balance. The balance is manufactured by Fisher Scientific Co., Pittsburgh, Pa.

The new balance has only one pan; the weight reads directly on a scale at eye level, eliminating a common source of error in adding up individual weights. The balance has all required weights built in and manip-

"Over A YEAR'S OPERATION AT WOODSIDE WITHOUT AN OPENING ROOM FIRE."



Eriez Magnetic Hump Between Feed Table and Vertical Opener

2 Eriez MAGNETIC HUMPS RETURN 5 DOLLARS ANNUALLY FOR EVERY DOLLAR INVESTED!

FIRES, caused by tramp iron were common at Woodside Mills, Greenville, S. C. Then in January 1947 at a cost of approximately $500.00, two Eriez Non-Electric Permanent Magnetic Humps were placed in the opening room ahead of the vertical openers. By this simple action, fires were eliminated. Previous to installation, the mill averaged at least one fire per month and the estimated loss was $2,500.00 annually—on property alone. Check the cost sheet—in less than six months, the two Eriez humps paid for themselves. The Eriez magnetic equipment shown above was designed specifically to remove tramp iron and subsequently eliminate fires. It can be used ahead of any high speed opening machinery with excellent results. Woodside's experience is typical of hundreds of mills using this Factory Mutual approved magnetic equipment.

Remember Eriez Permanent Non-Electric Magnets give you these advantages . . . Superior cleaning ability . . . No operating or maintenance costs . uninterrupted protection. Magnetic strength will last indefinitely.

Write today for Textile Bulletin 104-A for complete details.

SEE OUR CATALOG IN SWEET'S

See our catalog P 11b/2 Sweet's Process Industries File.

Pioneer of PERMANENT Magnetic Separation

See our exhibit at the 22nd Exposition of Chemical Industries, Grand Central Palace, New York—November 28 to December 3, 1949.

ERIEZ MANUFACTURING COMPANY

501 East 12th St. • ERIE, PA.

ulated by turning four external knobs. No weights are handled. Weights less than 0.1 gram are indicated optically and automatically. Total weight is read directly from a scale on the instrument panel. The sample to be weighed can range from 200 grams (approx. 7 oz.) to 0.0001 gram.

Knife edges and planes of the balance are sapphire, the pan is gold-plated, and entire case is aluminum with baked-lacquer finish. Learning to operate the balance is simple, and tests have shown that inexperienced operators can learn to weigh samples in 20 to 25 sec. after less than 1 hr. of practice. Beam of the balance has a constant load; hence, sensitivity remains constant regardless of sample size.

Because of its speed and simplicity of operation, the new balance is ideal for production control at test stations in textile plants. The sturdy construction and elimination of the adding-up of individual weights greatly reduces training time for operations.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-117.

Better Dyeing Results From Inclosed Dyebox

Better control of dyeing and savings in steam, water, and dyestuffs are said to result from the fully inclosed construction of a new dyebox developed by S. Blickman, Inc., Weehawken, N. J. Safety glass windows on all four sides permit complete visibility, but heat and moisture are kept inside the box. Counterbalanced doors at front and rear allow quick, one-hand opening for access to the box interior.

A new development is stainless-steel welded oval reel supports which replace the cast iron formerly used. These supports are independent of the box and transmit the load directly to the floor.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-114.

TENSION remains constant during unwinding from cakes after it has once been set.

Cake Holder Reduces Waste, Number of Breaks

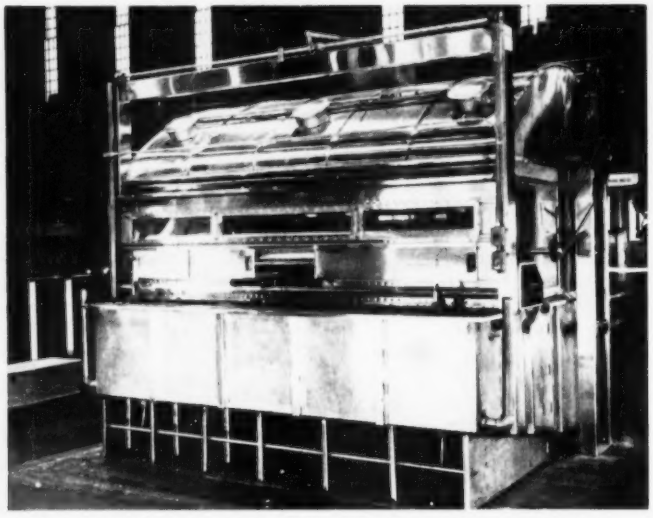
Elimination of waste by keeping synthetic-yarn cakes tightly wound until used up is claimed for the new Plasticbilt cake holder. The holder is made by Plasticbilt Corp., and is available only through R. E. L. Holt, Jr., & Associates, 217 Jefferson Bldg., Greensboro, N. C.

The new cake holder is constructed of light metal and plastic and is said to be rustproof.

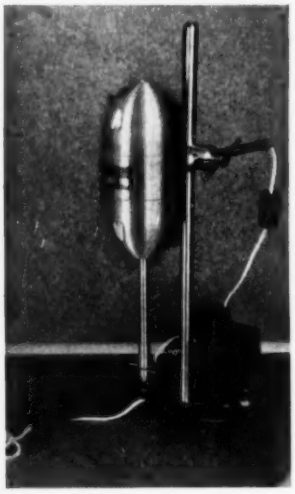
Tension on the holder is easily adjusted and, once set, remains constant through the unwinding operation, the manufacturer states.

The holders are easily installed, fit all standard cakes, and are simple to operate. Their use is said to reduce number of breaks, reduce waste, increase production, save time, decrease winding rate, and increase operator efficiency.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-115.



ROUND CORNERS in the tube of this fully inclosed dyebox make cleaning easier, faster.



ANNULAR FLOW produced by counter-rotating shafts produces no cavitation or centrifugal effect, will not overflow nearly filled containers.

Counter-Rotating Mixer Does Fast Dispersion

The new Brookfield counter-rotating laboratory mixer, manufactured by Brookfield Engineering Laboratories, Inc., 004 Porter St., Stoughton, Mass., makes available mixing speeds needed in many textile mixing operations.

By using two motors driving two concentric oppositely rotating shafts

TEXTILE Equipment NEWS
(Continued on page 230)

FOR ECONOMY

FULLER TEXTILE BROOM

Fuller Textile Brooms represent outstanding values at today's prices because they outwear ordinary brooms at least FOUR to ONE. Specially selected combinations of tough, pliable and resilient fibers are cemented together and encased in a light metal shell by five rivets. Two more rivets permanently fasten the hardwood handle to the shell.

The longer life of the Fuller Textile Broom reduces your daily cleaning costs substantially . . . makes Fuller your most economical broom-buy.

Phone your local Fuller Branch Office or write

The FULLER BRUSH CO.

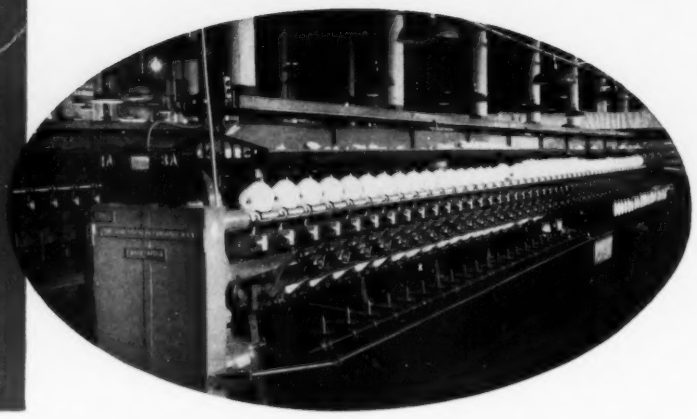
INDUSTRIAL DIVISION · 3594 MAIN ST. HARTFORD 2, CONN.

IN CANADA: FULLER BRUSH COMPANY, LTD., HAMILTON, ONTARIO

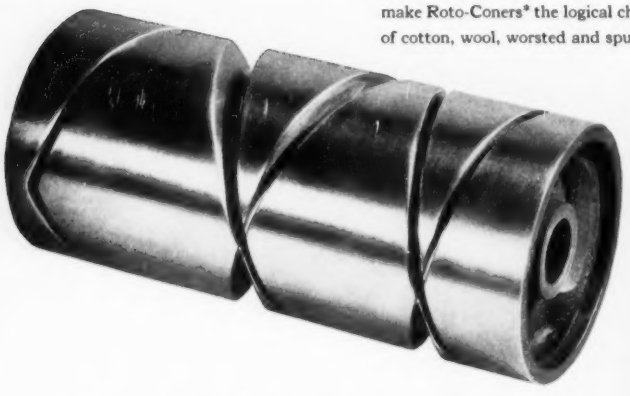
The Mill is

Riverside Worsted Co., Inc.

Woonsocket, R. I.



More Roto-Coners* with the ***all-metal*** rotary traverse are being installed in woolen and worsted mills than any other type of winder. High speed, low maintenance, and uniformly excellent quality of packages make Roto-Coners* the logical choice for production of cones and tubes of cotton, wool, worsted and spun rayon.



It's the rotary traverse that makes the big difference—permits higher speed (there are no cams to restrict traverse and yarn speed), reduces maintenance (simplified design, easy cleaning, splash system of oiling), improves package quality (roll-cuts eliminated, all packages uniform). Other features include quietness of operation, humidity-proof, and various types of tensions and slub catchers, used for different yarns and packages, which contribute further to the satisfaction of the knitters, weavers and dyers who use the product of the machine.

The Machines are

Roto-Coner* drum winders with the exclusive *Rotary Traverse*

UNIVERSAL WINDING COMPANY

Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles; Montreal, Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland

Agents in every principal textile center throughout the world

Winding and Twisting Machinery for Natural and Synthetic Yarns

®* **ROTO-CONER* *the only machine with the rotary traverse*

Kinks AND SHORT-CUTS

Best Kink Award For August

Each month TEXTILE WORLD awards $25 to the submitter of the kink which is judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the kink appears.

The best kink for August, according to TEXTILE WORLD reader-judges, was:

"Initial Pass Run Brightens Dye Shades"

By W. E. Fisher, Uxbridge, Mass.

Mr. Fisher is being sent a check for $25 with the compliments of TEXTILE WORLD.

Rolls Are Unweighted With Lever and Hooks

The lever described here is a quick means for removing a front or back top roll of a three-roll roving or spinning frame. It is not necessary to unweight or remove the roll saddle or stirrup.

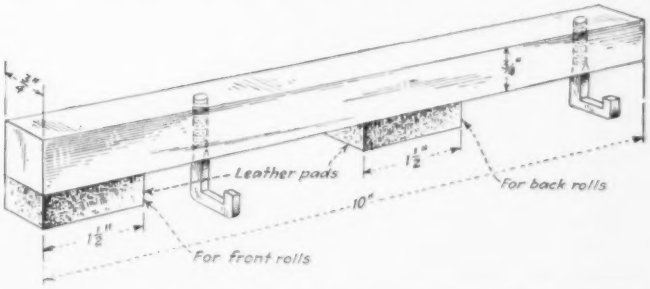
The lever is made of a 10-in. length of wood or metal ¾ in. square. Two pieces of leather and two hooks are secured to the wood or metal on one side as shown.

One piece of leather ¾ in. wide, ¼ in. thick, and 1¼ in. long is glued or tacked to the lever at one end. A ¼-in. hook is screwed into the lever about 1¼ in. from the leather pad, with the hook extending toward one side of the lever.

A similar hook is screwed into the lever about ½ in. from the other end, and a second piece of leather ¾x¾x1¼ in. is placed 2¼ in. from it.

To use the lever to remove a front top roll, place the leather pad marked "For front rolls" in the sketch on the middle top roll or arbor and the hook under the front end of the saddle. Lift up on the other end of the lever. The saddle is lifted, relieving the weight on the front roll. The roll can be easily removed.

To use the lever on a back roll, place



FRONT AND BACK TOP ROLLS on a roving or spinning frame can be easily removed if the roll weight is lifted with this lever. The leather pads act as fulcrums, and weight saddles are lifted by the hooks.

Below is announcement of a greater KINK CONTEST you can enter NOW. Kinks being published in this issue will be judged as outlined in the rules below.

$200 for Best Kink in 1949
$25 for Best Kink Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know of many kinks and short cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your kink may win the $200 check for the best kink of the year or the $25 check for the best kink of the month, maybe both!

Send in your kink now. There is always a contest going on. The more good kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it—we will pay you extra if you do and we can use it.

Look over the kinks in this and other issues. You will get ideas you can use as well as inspiration for kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published kink will be judged impartially by other mill men.

In case of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $200 prize contest for the year. Monthly contest confined to kinks published that month, yearly to those published in calendar year 1949.
3. All kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred kinks in each issue. Their votes will select the best kink, and their decision will be final.

Send kinks to whichever address you prefer:

TECHNICAL EDITOR, TEXTILE WORLD
330 W. 42nd St., New York 18, N. Y.

ASSOCIATE EDITOR, TEXTILE WORLD
P. O. Box 1641, Columbus, Ga.

NEW ENGLAND EDITOR, TEXTILE WORLD
P. O. Box 305, Salem, Mass.

the leather pad marked "For back rolls" on the middle roll or arbor. Place the hook at the end of the lever under the back end of the saddle, and bear down on the other end of the lever. This downward pressure causes the hook at the other end to lift up on the saddle, relieving the weight on the back roll. The roll can be taken out without trouble.

The leather pads being 1½ in. long permits the lever to be used on a fairly wide range of roll settings. Dimensions of the lever or locations of the hooks could be changed to accommodate unusual roll settings. *(K-1201)*

Card-Flat Settings Indicated by Dial Gages

A quick method for gaging the settings of flats to the cylinder of a cotton card has been worked out at North Carolina State College.*

A study of the effect of cotton-card settings on the frequency of neps in the card web involves numerous setting combinations of the five points at which the flats are set to the cylinder.

Normally, setting these points is a time-consuming job. The task involves stripping the card, removing five flats at proper intervals from the top side of the flat chain, and rotating the chain until the openings made by the removal of the flats are in proper positions at the five stands that support the flat side to the card arch. A special blade-thickness gage of proper size is inserted between the flat clothing and cylinder clothing, and adjustments of the slide are regulated by the feel of the gage. The distance between the flats and cylinder at each of the five points is set to the gage at both sides of the card.

This method of setting may be satisfactory in the mill, where settings are adjusted normally only after card grinding or a change in stock. But a quicker method is desired for changing settings on an experimental card in the pilot plant, where many changes must be made.

To accomplish quick setting of flats to the cylinder, the method described here has been put into use in our research laboratory.

Five dial gages that indicate thickness are fastened to the slide on each side of the card as near the adjusting stands as possible. The dials of these gages are graduated in increments of 1/1000 in. from 0 to 25 and a numbered "0, 5, 10," etc. to 25.

An adjustable rod is fastened to the cylinder arch and serves as an adjustable base for the gage. Fig. 1 (below) shows the installation of the gages on one side of the card, and Fig. 2 (below) shows the details of one of the installed gages.

After the unit is installed, the settings of the flats to the cylinder are made first in the normal way by use of a blade gage. After the settings have been carefully established, the ten dial gages (five on each side of the card) are adjusted by means of the adjustable rods to indicate the proper settings.

Now to change the distance between the flats and the cylinder, it is necessary only to raise or lower the flat slide by raising or lowering the flat stand fastened to the card arch until the dial indicates the desired distance.

The card does not need to be stripped between settings because the presence of cotton between the flats and cylinder does not affect the dial indication. Thus, there is no disarrangement of material between the cylinder and the flats, and the time required for setting is very much lessened. It is possible to run a continuous length of sliver made with different combination of settings. The point of demarcation between settings can be indicated on the sliver with colored chalk.

After grinding, the base setting will need to be changed, of course. To make the change, it is necessary to check only one flat carefully with a blade gage to find the amount of wire removed by grinding. This task is done by lowering the flat slide at one stand until the gage just fits.

The difference in the dial-gage reading before and after this adjustment indicates the total length of wire removed by grinding. All the gages can then be corrected by this amount. This adjustment can be made by means of the gage adjustment rods or by rotating the dial of the gage to indicate the correct value. The flats can be brought to the desired setting by noting the reading of the gages as the adjustment is made. *(K-1200)* J. F. Bogdan, *Dept. of Textile Research, School of Textiles, North Carolina State College, Raleigh, N. C.*

*A report of work done under contract with the U. S. Dept. of Agriculture and authorized by the Research and Marketing Act. The contract is being supervised by the Southern Regional Research Laboratory of the Bureau of Agricultural and Industrial Chemistry.

Mechanical Announcer Talks to Supervisors

A mechanical device for relaying messages to key men in the plant is in use at one large company. A 3- to

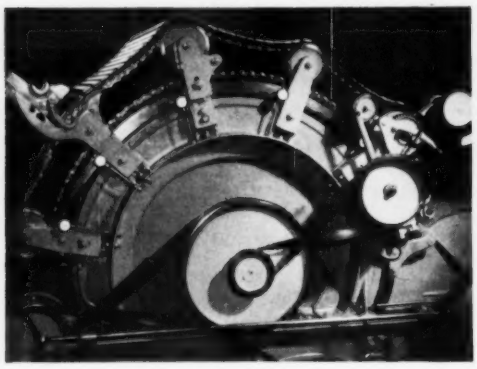


***Fig. 1. PILOT-PLANT CARD FLATS** can be quickly set to the cylinder by the use of the dial thickness gages shown here. A gage is fastened to the flat slide at each adjusting stand, with an adjustable base mounted on the card arch.*

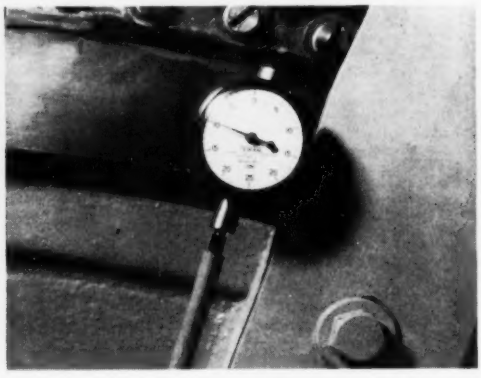


***Fig. 2. FLATS** are first brought to the desired setting (00.010 in. in this case) by the usual hand gage. Then the dial gage is set to indicate the same setting. Quick changes in settings can be made by raising or lowering the stand.*

...50-100% MORE LANOLIN
...25% MORE CAUSTIC
...OCEANS OF WATER

... with Taylor Automatic Wool Scouring Control

WOULD you like to cut costs on wool scouring? Here's a Taylor Automatic Control System that recovers 50 to 100% more lanolin, cuts caustic consumption 25%, and uses much less water. What's more, scouring quality is much better and more uniform. Below is the system we installed on the scouring range (supplied by C. G. Sargent's Sons Corp.) at the Ames Worsted Company's Walsh Mill, Lowell, Mass. Temperature in all bowls is automatically maintained by 80-R Fulscope* Controllers. First and second bowls have automatic dumping of sediment by Taylor Flex-O-Timer* Time Cycle Controllers. Here's how it works:

1. Hoppers of first two bowls are dumped in precise sequence. Flex-O-Timer pneumatically operates lever motor to open gate valve in hopper bottom just long enough to flush sediment with *minimum* loss of water and chemicals.

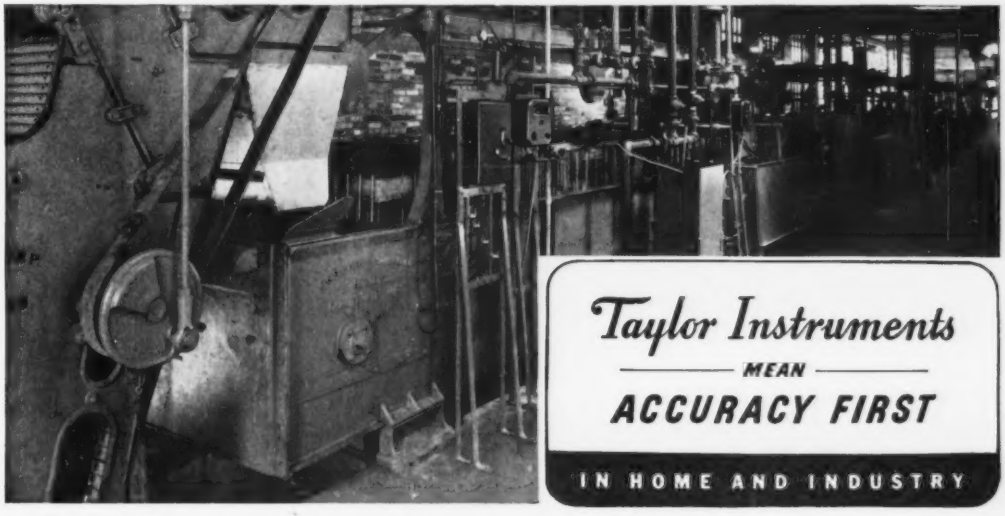
2. Dumping period and interval between dumpings is fully adjustable to meet all scouring requirements.

Without this automatic dumping control, someone would have to flush each hopper by a manually operated gate valve. If he held valve open too short a time, he wouldn't get rid of all the dirt. Too long a time and he'd lose an excessive amount of water and expensive chemicals.

A dozen or more companies are now successfully using Taylor Automatic Wool Scouring Control. Names on request. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

* Registered Trade Mark

Taylor Automatic Temperature and Dumping Controls on wool scouring range at the Ames Worsted Company's Walsh Mill, Lowell, Mass.



Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

5-min. message is available 24 hr. a day. A supervisor of other key men can "tune in" by dialing a certain number on the in-plant telephone.

The messages are prepared as follows:

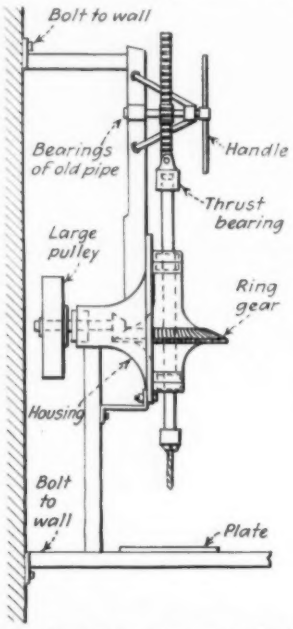
Someone reads the message into a standard tape recorder, and then the message is transferred to an endless metal tape that runs continuously. A system of electrical circuits amplifies the message and channels it into the telephone system. It can be picked up at any of the telephones if the proper number is dialed.

Messages are changed two or three times a week. Each tape tells when a new one will be put on. *(K-1219) Westinghouse Electric Corp.*

Homemade Drill Press Uses Auto Rear End

A homemade drill press that can drill up to 1⅜-in. holes in steel is shown in the accompanying sketch. Most of the material used was scrap.

The pulley is mounted on a driveshaft that has a bevel gear secured to the other end. This gear drives a ring gear taken from an old automobile rear end.



***DRILL PRESS** that will cut up to 1⅜ in. holes in steel can be made as shown here. The ring gear was taken from the back end of a junked automobile. Other parts can be picked up around the shop or the junk pile.*

The thrust shaft extends through the axle hole of the ring-gear housing. A drive key is welded inside the axle hole, and a keyway is cut for it in the thrust shaft.

At the upper end of the thrust shaft is a thrust bearing made of a piece of pipe connected to the hand feed gear. This gear is made from an old starter flywheel gear straightened out and welded to a 1x1-in. iron bar. The starter pinion gear is mounted on the feed-handle shaft.

A hole for a ½-in. drill is cut into the lower end of the thrust shaft, and a setscrew hole is tapped.

The supports necessary to hold the members of the drill press in place can be made of angle iron. The whole assembly can be bolted to the wall. *(K-1214) The Lincoln Electric Co.*

Gear Train Speeds Retiming of Dial

The dial on most seamless knitting machines has to be retimed every time a needle or other knitting implement is put in the dial. Of course, retiming the dial causes a loss of production time.

The gear train shown in the sketch was devised to eliminate much of the time lost in this way. It has the following advantages:

1. Spur gears do the work ordinarily done by six bevel gears. Spur gears are less expensive to make, mesh better, and can be cut in multiple.

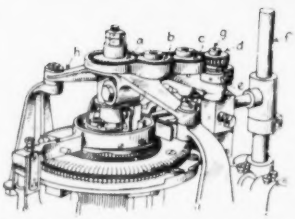
2. A thin cover (not shown) retains the thin grease in which the train runs, and there is less danger of getting oil on the fabric.

3. The vertical shaft g, which drives the web take-up can, is extended and has a long spline in the upper end. This arrangement permits dial yoke *h* to be easily lifted from over the latch ring, swung to the right, and locked to the back stand shaft at *f*. It is preferable to lock *h* with a thumbscrew without disengaging the gear train of the dial.

4. The exact centering of the dial needles or knitting implements between the cylinder needles is more easily obtained by turning gear *d* on shaft g with the opposed adjusting screws at e. This adjustment is wide enough to accommodate any gage of knitting machine.

5. Removing the dial yoke from over the latch ring permits better inspection of the timing of the sinker cams, and they can be more conveniently set to knit uniform stitches in the heels and toes.

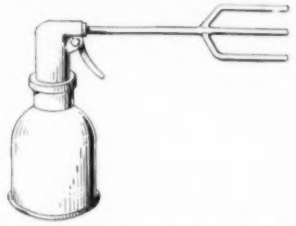
The required reduction of speed from gear *d* to the dial spindle gear



***THIS GEAR TRAIN** for a seamless knitting machine saves much of the time usually lost in retiming the dial when a needle or other knitting part has been put in the dial. Spur gears replace bevel gears, and the dial yoke is easy to remove and replace into running position. Text explains the lettering shown on the drawing.*

a is made through the gear train as usual. The positions of the gears is staggered to allow fine adjustment with opposed screws against the gear studs to eliminate backlash and hold the dials as near position as possible during reciprocal knitting. The holes in yoke *h* for the pivot studs of gears *b* and c are ⅛ in. oversize to allow adjustment, and the flanges on the studs are large enough to prevent the escape of the light grease through the enlarged holes under them. *(K-1220) Walter A. Simond, Franklin, N. H.*

Three Spinning Rolls Oiled at One Time



***THREE SPINNING ROLLS** can be oiled at one time with an ordinary oiler and a special spout with three tips. The extra tips can be soldered onto a regular spout, as shown here. Care should be taken to space them so that each roll will receive a drop of oil with a single pull of the trigger. (K-1207) W. C. Westbrook, Trion, Ga.*

Two Ways to Tighten Loose Wood Screws

Here are two ways to tighten wood screws when they get so loose that they no longer hold as well as they should.

As indicated in sketch A, fill the hole about half full of a paste made of linseed oil and fine metal filings. Screw the wood screw all the way up at once. The oil will be absorbed by the wood, and the metal filings will grip the

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Frederick Boger

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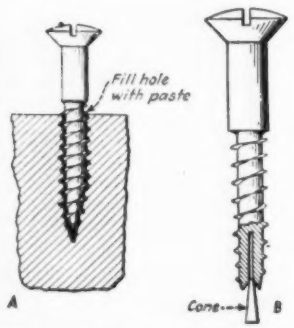


***WOOD SCREWS** can be tightened in the two ways shown here. Put a paste made of linseed oil and metal filings into the screw hole, as indicated at A, and insert the screw; or insert a small wedge into the split end of the screw, as shown at B.*

wood and the screw threads, holding the screw tight.

As shown at *B*, another way is to insert a cone into the end of the screw. Remove the screw and cut the end off, tapering the cut toward the center of the screw from each side. Then cut down the screw about 1 in. from the end with a hacksaw. Insert a small metal cone as shown in the sketch. Replace the screw in the hole and tighten it. Then wedge will be forced deeper into the hacksaw slot, causing the sides of the screw to flare out. The threads will firmly grip the wood. *(K-1218)* W. E. Warner, Essex, England.

Builder Rocker Jaws Replaced With Steel

The English type of roving-frame builder is operated by springs instead of weights. Probably the most trouble that occurs with this builder is caused by worn latches and rocker jaws and shoulders.

When these parts are worn, the roving is apt to run over the taper of the wound bobbin at both the top and bottom. Of course, much bad work is made.

Usually this condition is corrected by replacing the worn parts. These parts are fairly expensive. Since they are still good everywhere except at point of contact between the rocker jaw and the latch, it is economical to repair them.

To make the necessary repairs, take the rocker out and cut away the worn surfaces of the two jaws, as shown by the shaded areas in the sketch. Next, get some hardened-steel plugs to fit the shaded areas and fasten them to the body of the rocker with pins. These plugs should fit the rocker so that the distance from one jaw to another is the same or a fraction of an inch greater than that of a new rocker. The new jaws must also be smooth and square.

Now, grind the ends of the latches square so that they make smooth, solid contact with the new steel jaws.

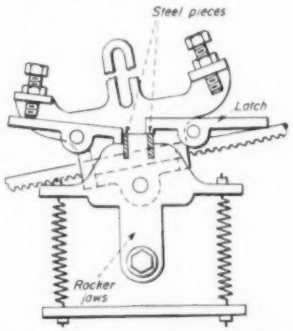
A rocker fixed in this manner will last for years.

The build of the bobbin should be carefully adjusted now. The adjustment should be made as follows:

Mark the bobbin at the upper and lower limits of winding. Measure the distance between these two points and mark the bobbin at the midway point. Run the carriage rail up or down until the eye of the flyer presser exactly coincides with the midway mark.

Now place a spirit level on the poker bar and level the bar. Set the carriage so that it will wind as many coils as desired on the first layer.

This adjustment will give a perfectly tapered bobbin. *(K-1205)* Wm. Shaw, Providence, R. I.



***STEEL JAWS** for the rocker of an English-type roving-frame builder can be installed as shown here when the cast-iron jaws are worn and are making bad work. Shaded areas are hardened steel plugs pinned to the rocker.*

Tape Holds Small Parts

Knitting- and sewing-machine fixers often have to work with very small parts, especially screws, springs, etc. It is easy to lose these parts.

An easy way to keep up with such small parts is to use some kind of tape that has an adhesive coating on both sides. Stick one side to a flat part of the machine or table, and lay the small parts on the other side as they are taken out of the machine. They will stick to the adhesive and remain in place until the fixer needs them. *(K-1210)* H. E. Wenrich, Berwick, Pa.

Count Gear Teeth By This Easy Method

14 teeth on this gear

***COUNTING THE TEETH** of a gear that cannot be seen all the way around is often a hard job. An accurate count of the teeth can be obtained with a strip of white paper or thin pasteboard.*

Wrap the paper around the perimeter of the gear, and rub it lightly to make certain that it touches every tooth. Then remove the paper and count the marks made on the paper by the gear teeth. The number of marks equals the number of teeth in the gear. (K-1221) W. C. Gibson, Jr., Atlanta, Ga.

Emery Safety Shoe Designed for Ladder

The use of straight ladders should be avoided if a suitable type of step-ladder of sufficient length is available. There are times, however, when a straight ladder must be used. Slipping of these ladders on smooth floors is always a source of danger and a frequent cause of accidents.

In many cases, such as concrete, tile, or other masonry floor surfaces, a spiked ladder cannot be used with safety; or if used, the spikes cause damage to the floor. Small emery-coated shoes placed under the legs of a straight ladder have been found useful in such cases.

These shoes can be made of wood to the approximate dimensions given in the drawing. Variations may be found desirable in the size of slot to fit the ladder rail.

To make one of the shoes, start with a piece of $\frac{3}{8}$-in. plywood 4 in. long and $4\frac{1}{2}$ in. wide. Cut two pieces of 1x1-in. lumber 3 in. long and one piece $4\frac{1}{2}$ in. long. Nail the $4\frac{1}{2}$-in. piece along the edge of one of the $4\frac{1}{2}$-in. ends of the plywood. This block can be seen clearly in the sketch. Now

For Greater Efficiency... Check These Special Features Of The NEW *Leverpak* ROVING CAN

Inner plastic rim protects sliver from abrasive action.

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Steel kicking band insures long life under hard usage.

All metal outer bottom protects can and contents from grime and grease.

Longer life, greater efficiency—these are improvements you will want to see before you place your next order for Roving Cans. And you'll find them in Continental's new LEVERPAKS.

Rigid sidewall construction of laminated kraft—no rivets—provides a smooth interior. The outer plastic coating not only resists ordinary wear-and-tear, but withstands excessive heat and humidity conditions. And note all the other construction features that add up to extra years of service.

LEVERPAKS may even reduce your labor costs. Their wider diameter (15 13/16 in.) provides greater capacity (3.8 cu. ft.). And greater capacity means smoother, more continuous machine operation.

Any way you look at it, Continental's LEVERPAK Roving Can is *Hard to Beat!*

- Bottom metal chime permits easy rolling, prevents abrasion.
- Specially treated interior safeguards against contamination.
- Top and bottom reinforcing bands are made of heavy gauge, electro-galvanized steel.

Covers and locking bands are available for inter-plant movement or temporary storage.

Outside diameter 15 13/16 in.
Standard outside height 36 inches.
Other heights available.

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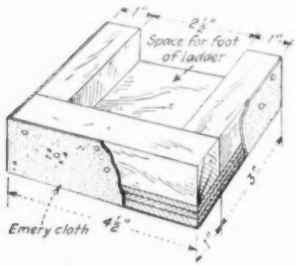
nail one of the 3-in. pieces onto the space left on each 4-in. side of the plywood. These blocks are the side blocks in the sketch.

These shoes are not fastened to the ladder. One is placed on the floor under each leg when the ladder is put into position. The front and side blocks hold the ladder on the shoe, and the emery prevents the shoe from slipping on the floor.

Coarse emery sheets should be used. They can be either cemented to the plywood bottom of the shoe or tacked to the sides of the blocks as shown in drawing. *(K-1202)*



***SAFETY LADDER SHOES** for use on masonry floors where spikes cannot be used can be made as shown here. Put one of these shoes on the floor under each ladder rail. The blocks keep the ladder in the shoes, and the emery prevents the shoes from slipping on the floor.*

Shipper-Handle Lock Works on E-Model Loom

A safety lock for the shipper handle of a Draper E-Model loom can be made as shown in the accompanying sketch. The lock can be used by a loomfixer to prevent a loom he is working on from being started up until he releases the shipper handle.

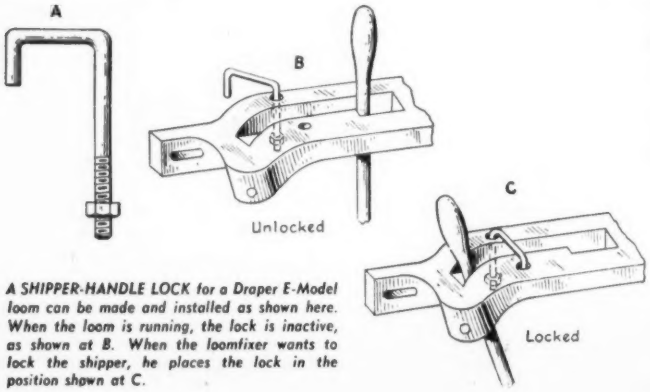
The lock is made of ¼-in. steel stock bent into something like a figure 7, as shown at A in the sketch. The long end of the piece is threaded to receive a nut.

To locate the safety lock properly across the shipper-handle slot, push the handle to the "off" position. With the loom stopped, drill a hole in each side of the slot about ¼ in. in front of the handle. Holes should be about ⅛ in. larger in diameter than the ¼-in. rod.

Now place the long end of the rod through the hole in the back side of the slot, and run a nut up on the threaded end. The rod should be long enough to permit an inch or two of clearance between the nut and the slot side. This clearance will permit the lock to be raised and the top of the figure 7 placed across the slot.

When the safety lock is not needed, the top side of the rod is swung away from the slot, as shown in sketch *B*. The lock is in this position when the loom is running.

When the fixer wishes to lock the shipper handle to prevent the loom from being started, the lock is placed in the position shown in sketch *C*. With the shipper handle in the "off" position, the lock is lifted and swung around across the slot. The short end of the rod is dropped into the hole drilled in the front side of the slot. *(K-1206)* W. C. Westbrook, Trion, Ga.



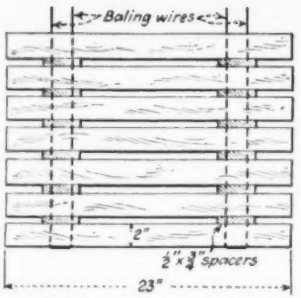
***A SHIPPER-HANDLE LOCK** for a Draper E-Model loom can be made and installed as shown here. When the loom is running, the lock is inactive, as shown at B. When the loomfixer wants to lock the shipper, he places the lock in the position shown at C.*

Wooden Floor Mat Made of Picker Sticks

A wooden mat placed on a concrete floor in front of a workbench or other point where work is constantly done is a valuable relief to the feet and legs. One way to make such a mat is shown here.

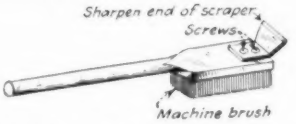
Loom picker sticks usually break at the thin end. I saw off the broken end, leaving a 23-in. length of the big end of the stick. Then I drill a pair of ⅞-in. holes near each end of the stick, the holes of each pair being about ¼ in. apart. These holes are for baling wire used to hold the sticks together.

It takes about 25 of the picker sticks to make a mat 6 ft. by 23 in. I use ½x¾-in. spacers between each two sticks. *(K-1204)* A. L. Kirchhofer, Easton, Pa.



***A WOODEN MAT** made of broken picker sticks and held together by baling wire relieves the feet and legs when you must stand on a concrete floor. The mat is especially useful in front of a workbench.*

Metal Scraper Added to Brush



***A METAL SCRAPER** can be fastened to the back of a cleaning brush as shown here. It is useful in cleaning hardened accumulations of size, dirt, grease, etc. from the machine.*

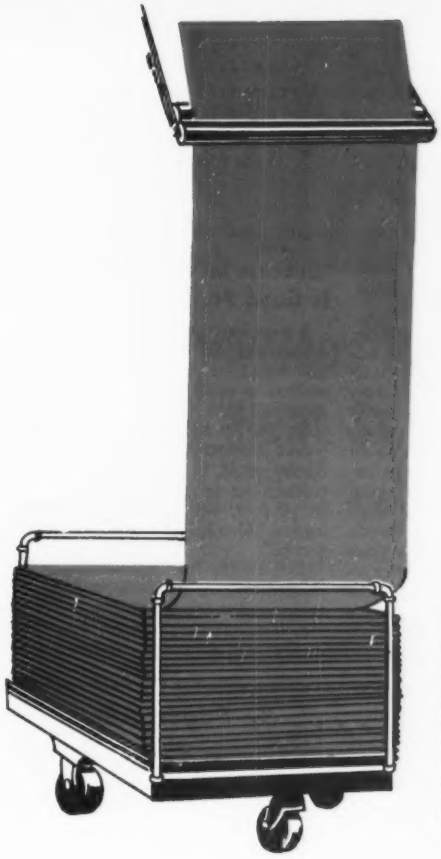
The scraper can be made from angle iron or sheet metal. Two screws will hold it securely to the wooden back of the brush. The scraping edge should be ground off to form a blade. (K-1211) H. E. Wenrich, Berwick, Pa.

Cleaning Solvent For Leather Belts

A good cleaning solvent for use on dirty, oil-soaked leather belts is carbon tetrachloride. It dissolves the grease and oil and causes no fire hazard, as many other cleaning solvents do. In fact, it is an effective fire extinguisher.

The cleaning operation must be carried out in a well-ventilated room to guard against the effects of fumes. Rubber gloves should be used by the operator to prevent possible skin irritation.

If the solvent dries the belt too much, apply neat's foot oil. *(K-1098)* Paul C. Ziemke, Oak Ridge, Tenn.



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Sterox No. 6, one of Monsanto's liquid nonionic synthetic detergents, can be used successfully in preparing goods for the pad box. Sterox is dried into the fabric before it gets to the pad, resulting in quick, even dye penetration.

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Round Table

FOR EXCHANGE OF IDEAS—*The Round Table is open to letters from any and all readers discussing subjects relating to mill management, production, engineering, technology, etc. Names of contributors will be held confidential if so requested, but contributions must be signed with real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table,* TEXTILE WORLD, *330 West 42nd St., New York 18, N. Y. Write your message on card in Reader-Service Department if you wish.*

Ring and Air Keys To Coal Pulverizer

The coal pulverizer in the TEXTILE WORLD story on page 117 of the July, 1949, issue is a completely new development which was originated by the Springs Cotton Mills. However, the article played up the spring development as being the most important item in the new pulverizer. The author made it clear in his original write-up that the springs themselves were developed separately and for a different purpose from what we did. What we did in effect was develop a new top-grinder ring and a new means of air admission which brought about a very large increase in capacity. The springs contributed nothing from the standpoint of increased capacity, and they were developed separately by the Babcock & Wilcox Co.

We feel that in fairness to all concerned that this article should be corrected. *(R-453, W. C. King, The Springs Cotton Mills, Lancaster, S. C.)*

We are glad to publish this correction and thank Mr. King for bringing it to our attention. The error was made through a misunderstanding of a telephone call between the author and the editor handling the manuscript. —*Editor.*

Key Men Should Exchange Ideas

I read the editorial [TW, Mar., 49, p. 3] on the need for interplant association among key men who oftentimes never get to know each other even when in the same department. The thought expressed hits the nail on the head. I have been through an experience in which a condition of non-intermingling held true. For many years the lack had proved to be a stumbling block for better interplant cooperation. A condition of jealousy was fostered more by the manager of one plant than by the divisional overseers. Interchange of ideas was entirely lacking and lead to a condition of non-uniformity of production.

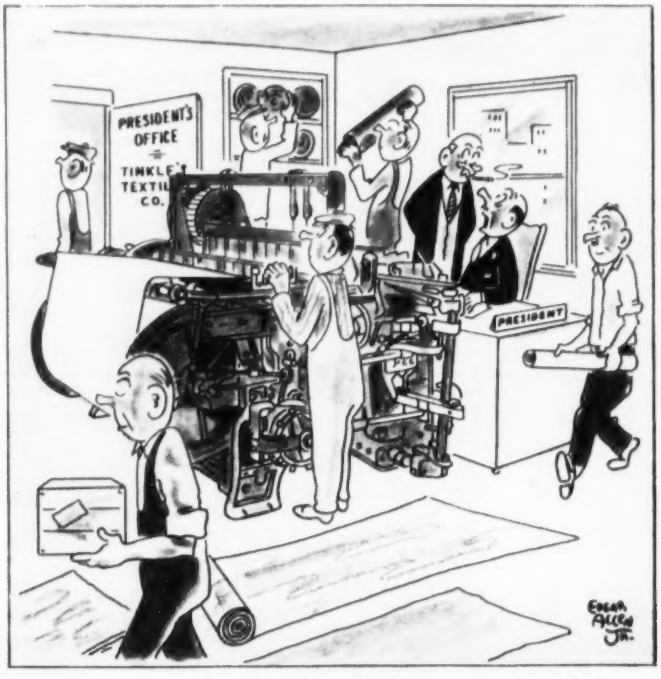
Certainly when there are several divisions in the same concern, a commingling of the department heads is to be more desired and fostered than anything else that I know of for the interchanging of ideas on production methods. The firm executives who do not see to it that this exchange becomes a working factor in the organization are indeed blind to the benefits derived from such a happy condition when it truly obtains. Seven years of personal experience of noncooperative relations were mine, and I speak from first-hand experience. More power to your editorials for building better company relations. *(R-451)*

"Success on Display" Is Good Promotion

A merchant spends much time and expense on his displays because he has found it a most economical method to create business. Mill management might very profitably use the same plan in selling the idea of improved relations with workers. Such a display could center around a single theme: the success of the mill and its product, with a reminder to the worker, "You helped accomplish these results."

You already have a bulletin board? Fine and dandy. By all means keep on using it. But this proposition is different. You're trying now to prove the importance of every employee and

TEXTILE TICKLES . . . . . By Edgar Allen, Jr.



"There are times, P. J., when I think we should enlarge the plant a bit!"

Rayon Reports

Prepared Monthly by American Viscose Corporation, New York, N.Y. — October, 1949

Avisco Develops New Process for Improving Heat Stability of Polyethylene Fabrics

A new finishing treatment which gives polyethylene fabrics greater stability to heat has been developed by the American Viscose Corporation. The new technique is capable of controlling fabric shrinkage to less than 2 per cent at 165° F.

Avisco believes that the solution of this problem removes the last barrier from polyethylene's widespread use in fabrics for automobile seat covers, upholstery, handbags, shoes, luggage, and various other applications.

The first step in the new stabilizing process is to treat the fabric in semi-relaxed form with hot water, to allow shrinkage in both warp and filling directions.

Then the material receives a brief steam treatment on a decating machine to enhance uniformity and flexibility.

For smooth fabrics, a final calendering is recommended. All three of these operations can be done on commercial equipment at reasonable cost.

Polyethylene plastic monofilament yarns have been produced on an experimental scale by Avisco for the last two years. During this time the various problems of production and use have been under intensive study at the corporation's chemical research and textile research departments. Filament sizes extruded to date have been from 6 mils (152 denier) in diameter up, with 10 and 12 mil representing the most popular sizes.

Polyethylene has the distinction of being the only textile fiber lighter than water, and fabrics made from it are naturally very light. It can be made in either bright or dull luster and in a wide range of brilliant colors.

RAYON 20 YEARS AGO

NEW YORK, October, 1929 — Makers of artificial flowers are using rayon for their products. Large flat flowers of transparent velvet are being featured in shades to match the new fall costumes.

NEW YORK, October, 1929 — A representative of the Rayon Institute reports that dry cleaning of rayon is today considered foolproof if properly handled. Any of the eleven chemicals commonly used to remove spots can be used successfully to clean viscose rayon.

NEW YORK, October, 1929 — The United States now leads the world in production and consumption of rayon. At the present time the capacity of American plants is approximately 100 per cent greater than that of our nearest foreign competitor.

MAKE USE OF *Avisco* 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

AMERICAN VISCOSE CORPORATION

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Sales Offices: 350 Fifth Avenue, New York 1, N. Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.

Only $2.98 helps put new "sell" in television advertising

Sponsor of television show had to refilm his commercials to meet a new selling problem. New films picked up at studio 4 P.M., delivered to TV station 800 miles away 8:47 P.M. same evening. Air Express cost for 11-lb. carton, $2.98. (In *undramatic* fashion Air Express keeps radio, television or any business rolling.)

Remember, $2.98 bought a complete service in Air Express. Rates include door-to-door service and receipt for shipment—plus the speed of the *world's fastest* shipping service.

Every Scheduled Airline carries Air Express. Frequent service—air speeds up to 5 miles a minute! Direct by air to 1300 cities; fastest air-rail to 22,000 off-airline offices. Use it regularly!

Only Air Express gives you all these advantages

Nationwide pick-up and delivery *at no extra cost* in principal towns, cities.

One-carrier responsibility *all the way;* valuation coverage up to $50 without extra charge. And shipments always *keep moving.*

Most experience. More than 25 million shipments handled by Air Express.

Direct by air to 1300 cities, air-rail to 22,000 off-airline offices.

These advantages make Air Express your best air shipping buy. Specify and use it regularly. For fastest shipping action phone Air Express Division, Railway Express Agency. (Many low commodity rates in effect. Investigate.)

SPECIFY AIR EXPRESS

GETS THERE FIRST

Rates include special pick-up and delivery door to door in principal towns and cities

AIR EXPRESS, A SERVICE OF RAILWAY EXPRESS AGENCY AND THE SCHEDULED AIRLINES OF THE U.S.

Round Table

(Continued)

every department. You cannot allow a score of other matters to clutter up this straight-forward message.

First of all, an ordinary bulletin board isn't good enough for this putting "success on display." Put your material under glass. Not only do you preserve photographs and clippings in this way, but you give workers the feeling that here is something worth special attention. Bulletin boards with glass doors add dignity you can secure in no other way. A quick test will prove this to your own satisfaction.

And don't be content to stick a thumb tack or two in the corner and plaster the material wherever there is a bit of empty space. If you have only one item to display, center it carefully. When you add more, then re-arrange the entire display so that you retain a sense of balance. Frequently a small item stands out much better with a suitable background, and you may double results by taking the time to mount material effectively.

Mill management, which in the past has put an occasional letter or piece of publicity on the regular bulletin board, may at first believe there just isn't a sufficient amount of this material to conduct a display of success stories connected with the mill. However, it's all a problem of utilizing what comes in and then filling in the gaps by creative effort.

For example, management may already have the habit of passing along to employees those once-in-a-while letters of praise from customers. But why not send an occasional letter to customers, asking them for comments on certain phases of the mill, its products, and its services? Out of the resulting correspondence you may be sure to find a considerable number of comments to add to your success display.

Or possibly the mill hasn't received its share of publicity in the local and regional newspapers or in industry publications. Do something about it! If necessary, dig up facts for a story with an interesting slant and invite the publications to use it. [For best results, develop your material with a definite publication in mind—Editor.] After publication play it up on your display even if you think everyone has read it. Some will see it there for the first time; for others, remember that wise repetition is the essential of effective display work.

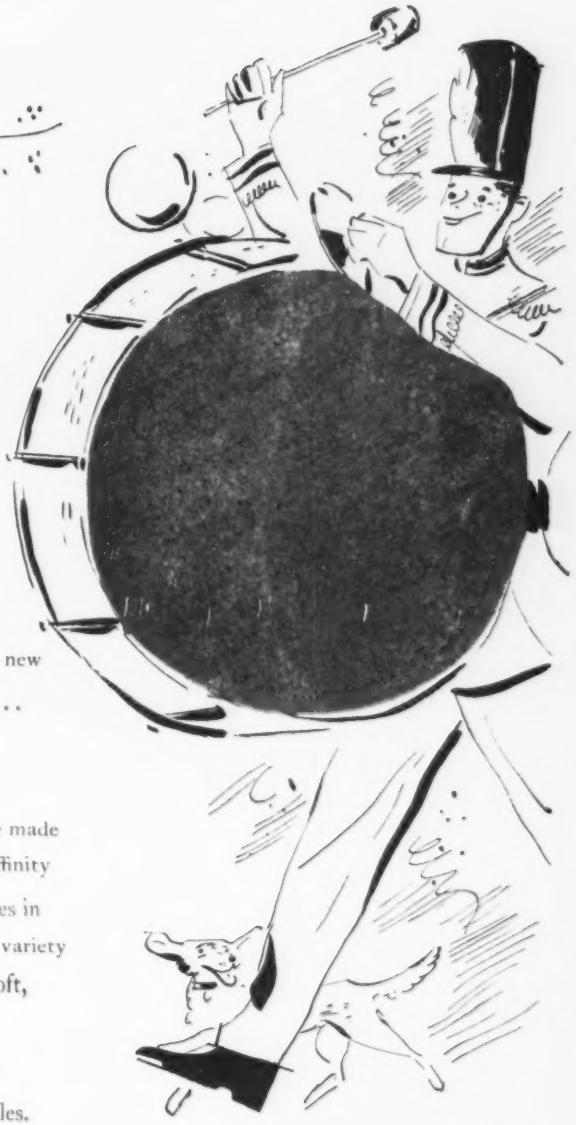
Ask customers to send you photographs of your products in use, or even just snapshots of their own places of business. Such pictorial proof of the widespread use of your products carries more weight than statements about

For more information, write direct or use Reader Service post card.

Leading the parade . . .

CELCOS†

starts off with FOX WELLS & CO.



Now coming into view . . . Celcos . . . the new Celanese* all-purpose rayon staple fiber . . . one of the latest and greatest Celanese research achievements!

Through the use of Celcos, fabrics can be made to boast a cavalcade of features. Great affinity for a wide range of dyes. Wide possibilities in yarn combinations and blends for a vast variety of patterns. Fabulous fullness of hand. Soft, pleasing drape. Dimensional stability. Strong wrinkle resistance. Easy cleaning.

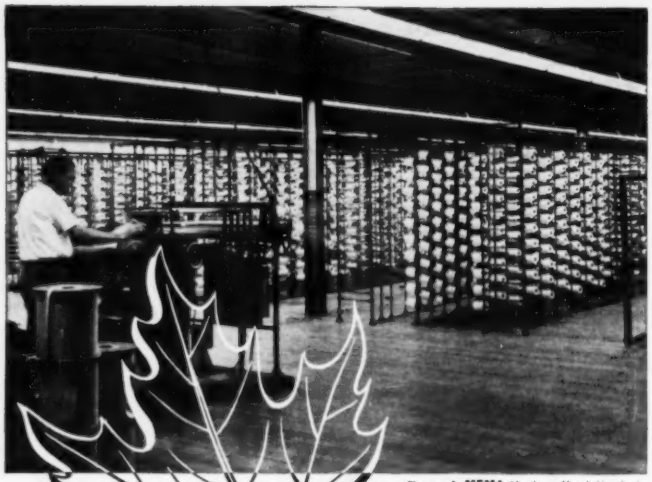
Watch for Celcos in the new line of textiles. It's out in front . . . and on the march!

Celanese Corporation of America,
180 Madison Avenue, N. Y. 16, N. Y.

Fabric construction: Celanese acetate rayon filament warp with Celanese Celcos filling . . featured by Marchant Company, Greenville, South Carolina.

Celanese® ACETATE RAYON STAPLE FIBER

*Reg. U. S. Pat. Off. †Trademark



Floor of **MFMA** Northern Hard Maple in Robbins Cloth Mills, Inc., Robbins, N. C. Photo by courtesy C. M. Guest & Sons Greensboro, N. C.

for long-run
resilient ECONOMY

NORTHERN HARD MAPLE

● When your architect or engineer recommends Northern Hard Maple Flooring for your new mill, he's proving that he has your very best interests in mind. He *knows* that **MFMA** trademarked Northern Hard Maple is the soundest of all specifications for textile mill floors.

Cotton, silk and rayon mills, North and South, have furnished the proof through generations of faithful service, that Northern Hard Maple makes the finest of floors for their exacting needs. Its grateful *resilience* underfoot makes it the workers' favorite. A person can stand, work and walk on it in comfort for hours, with less fatigue—which means fewer accidents and mistakes. It's bright, sunny, cheerful. A brush keeps it clean. It doesn't sliver, resists dents and scrapes and the pound of truck wheels.

Northern Hard Maple Flooring means definite economy, too. ALL grades are good grades—**MFMA** Second Grade, **MFMA** Third Grade, all sizes and thicknesses, have their logical places in mill floors. All are association-supervised and guaranteed as to millwork, scientific kiln-drying and, most important of all, guaranteed as to *species*. The **MFMA** trademark assures all this.

See Sweet's

Section 13/g/6, for catalog data: Ask for *new literature* on floor maintenance and write us if you have any floor problems.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
Room 392—46 Washington Boulevard
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FLOOR WITH *NORTHERN* HARD MAPLE
BEECH AND BIRCH

Round Table

(Continued)

shipping to every state in the union. Pictures get across the idea a lot more quickly and permit employees to see their success on display without wasting time to do it.

Every prosperous mill today is the sum total of hundreds of large or small success stories. Collect the ones that apply to your own mill. Give them an attractive spot where they will be free from the ordinary run of material that belongs on the bulletin board. Just as good displays sell merchandise, so can they produce such things as self-confidence, pride in work, higher worker morale, and that warm glow inside when a mill hand can say to himself, "There are some of the results that I helped to achieve." *(R-452, George M. Dodson, Harrisburg, Pa.)*

Worsted Should Surrender Regain

We have read Malcolm Paul's Round Table item (R-462) in April TEXTILE WORLD concerning the proper relative humidity to carry in worsted spinning.

If we may, we would like to make a few comments. An animal fiber such as wool works better when it is surrendering regain. This is accomplished by keeping the relative humidity at a lower point in the room than the relative humidity which corresponds to the regain in the wool. Whenever regain is being surrendered, better roving and spinning results.

Perhaps Mr. Paul's roving does not contain enough regain for good roving; and when it gets to the spinning process, it is necessary to carry a fairly low relative humidity in order for moisture to be given up to the atmosphere by the yarn. If roving had a higher regain, it would be possible to carry a higher relative humidity in the spinning and obtain a better cooling from evaporative cooling in the summertime.

It is probably in the cool weather that you are able to obtain a temperature of 71° F.; since in the summertime you would not be able to do this even with the evaporative cooling, and especially at only 42 to 44% r.h.

It would seem to me that 71° F. is too low, especially with oiled yarn. A higher temperature, around 80° F., should make the oil flow better and consequently improve on its diffusion.

These are just a few ideas which we thought might be a little helpful. *(R-481, H. R. Rich, Sales Engineer, American Moistening Co., Providence, R. I.)*

For more information, write direct or use Reader Service post card.

introducing NEW GARLAND RAWHIDE PICKERS

REINFORCED STICK HOLE

Molded rawhide reinforcements at the stick hole cut down stick hole wear in the new Garland picker.

Result: Longer picker life.

IMPROVED SPINDLE HOLE

The spindle hole is perfectly rounded, excavated, and strengthened by locked-in flanges at both ends.

Result: No reaming, no binding, stays round.

MOLDED FOR UNIFORMITY

The new Garland rawhide pickers are individually pressure molded to uniform dimensions.

Result: The elimination of filing and fitting.

STRENGTHENED PICKER HEAD

The stronger, heavier outside layer of rawhide eliminates the need for a rivet through the picker head.

Result: Perfect throw through a longer picker life.

Water Buffalo Hide

Prewar quality Water Buffalo Hides are used exclusively in the New Garland Pickers. Our past experience in picker manufacturing has proven that Water Buffalo Hide, because of its resilient and rugged nature, is the most suitable material for making box-loom pickers.

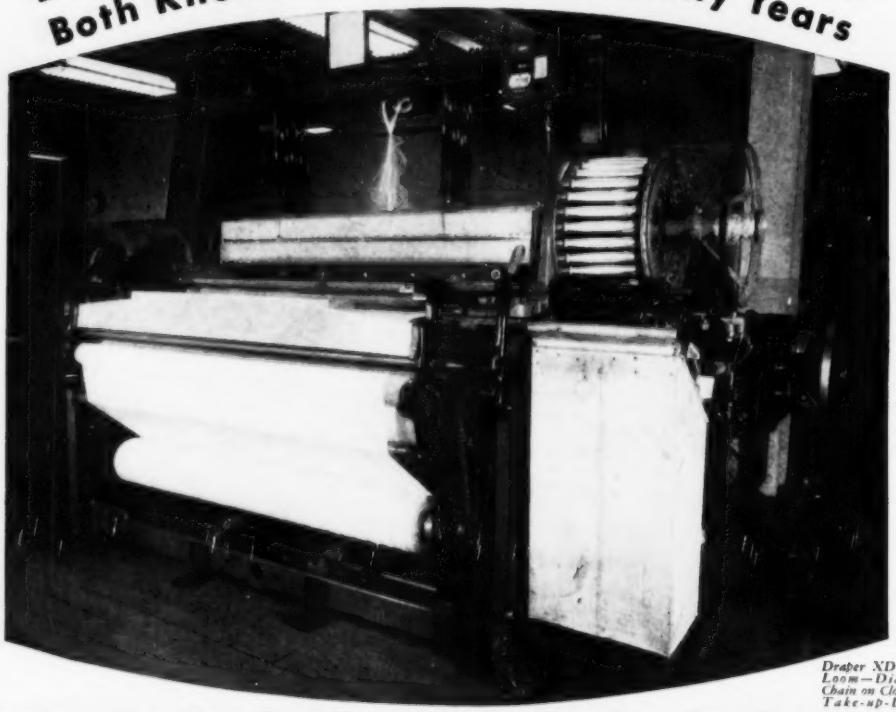
Thus we believe that Rawhide Pickers made from this material are more capable of withstanding the shock of today's high speed looms without inflicting serious damage to other parts of the loom.

Garland
MANUFACTURING CO.
SACO, MAINE

Manufacturers of rawhide loom pickers for over 80 years.

DRAPER LOOMS - DIAMOND CHAINS

Both Known for Quality for Many Years



Draper XD Model Loom—Diamond Chain on Cloth Roll Take-up Drive.

Dependability of the product and integrity of the maker have been well established for well over half a century.

As a result of manufacturing Roller Chain for 60 years, improvements in materials, methods and facilities have brought Diamond Chains to their highest degree of quality, strength, and dependability. They provide the long life, accurate performance demanded by leading manufacturers of machinery.

Both user and maker of such equipment benefit through the long years of satisfactory operation that insures steady output, and eliminates wasted time and power costs. DIAMOND CHAIN COMPANY, Inc., Dept. 483, 402 Kentucky Avenue, Indianapolis 7, Indiana. *Offices and Distributors in all Principal Cities.*

DIAMOND **ROLLER CHAINS**

READER-SERVICE DEPARTMENT

This four-page insert is at your disposal to help you derive increased benefit from your readership of TEXTILE WORLD. We hope you will study it, get well acquainted with it, and use it freely.—The Editors.

TO COMMENT on anything about TEXTILE WORLD, use the card below. We hope you will use it to give us your opinion, favorable or unfavorable, on any editorial material in order to help us serve you better. Use it to discuss textile-manufacturing problems, perhaps enlarging on something already printed, for publication in the Round Table department. Use it to tell us what you would like to see published to help you with your mill problems.

TO INQUIRE about any mill problem you may have, use the card below. If you have a technical question, submit it to our Questions and Answers department. Be sure to give as complete details as possible so that your question can be fully understood.

TO CONTRIBUTE kinks, textile-news notes, or other brief material, use the card below. If you have some useful idea for cutting costs, improving quality, or increasing production, enter it in our KINK CONTEST. We also warmly welcome queries as to the probability of our accepting for publication any specific articles you may contemplate writing for us.

☆

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Dear Editor:

(over)

MANUFACTURERS' BULLETINS

FREE FOR THE ASKING

Reviewed here is the outstanding trade literature of the month. Items are listed one month only—no repeats. Mill executives may request copies of literature by using cards on the next page.

Custom-made thread guides of AlSiMag, ceramic product of American Lava Corp., are illustrated and fully described in a new booklet. Various sections cover physical properies, improved guide designs (showing the old and the new design), open guide designs (on which there are no tooling or die charges), and typical guide designs. Special guides of AlSiMag 193 (for monofilament) and 491 (for use where excessive wear is experienced) are included. **(F-1)**

Syn-O-to CR, a combination detergent, wetting agent, and penetrant for use in many textile operations, is the subject of a folder published by E. F. Drew & Co., Inc. The chemical, a highly concentrated, non-sulphonated cocoanut-amide condensate, is described. Chemical nature, physical properties, and suggested applications are covered. **(F-2)**

A new-type instrument-current transformer, the first to which the butyl-molded technique has been successfully applied, is featured in a bulletin issued by General Electric Co. The method of manufacture is show pictorially, and the component parts are shown in enlarged photographs. Graphs indicate the accurary of the new line of transformers. **(F-3)**

Do you know how a ring traveler is made? The 50th anniversary issue of *The Traveler*, publication of Victor Ring Traveler Co., shows every operation from wire-drawing through polishing, testing, packing, and shipping. **(F-4)**

Design wheels for Brinton knitting machines are discussed in a booklet prepared by H. Brinton Co. There is information on the method of laying out a pattern as well as detailed information on such specific patterns as bias or diagonal effects, figured effects, and three-color patterns. Sinker wheels and dial wheels are also discussed. **(F-5)**

Gas-welding supplies are listed and described in a new catalog announced by Air Reduction Sales Co. Carefully indexed for ready reference, the catalog describes 19 different gas-welding rods, eight fluxes, and includes information on silver brazing alloys and carbon rods and plates. The text material offers descriptions of the mechanical properties of the various products and recommendations regarding their application in industrial plants. **(F-6)**

The "breathing-action" design of an impact dryer is discussed in a recent issue of *Proctor Progress*, published by Proctor & Schwartz, Inc. A side view illustrates the operation of the new dryer. There is also some information for knitters regarding boarding and preboarding equipment. **(F-7)**

Fire safety during plant shutdowns is the subject of a bulletin recently issued by Factory Mutual Engineering Div. Based on actual fire experience, it lists those items which require attention before a plant is closed for a vacation or other extended period. The elimination of sources of fire, checking of protective equipment, and special precautions for alterations and repairs complete the scope of the bulletin. **(F-8)**

Synchronous generators of the high-speed coupled type are featured in a catalog issued by Allis-Chalmers. Both the bracket-bearing and pedestal bearing types are shown. There is data on stators and rotors used and information about voltage regulators, switchboards, and control. **(F-9)**

Processing of rayon staple is presented in concise but complete form in the current issue of *Platt's Bulletin*. The article surveys the machinery, from opening room to spinning, capable of handling staple lengths of from 1 7/16 to 3 in. Other features in the publication deal with Axminster carpet looms, woolen carding, and rayon manufacture. **(F-10)**

A cylinder bearing for spinning frames and twisters is described in a folder published by Southern States Equipment Corp. Pictures of the basic unit and its component parts are included with test material which describes installation and operation. **(F-11)**

The "Ox"—a new line of electric lift trucks—is presented in a bulletin made available by Barrett-Cravens Co. Operating views are shown along with close-ups of advanced electrical and mechanical features. Information on batteries and chargers is also included. Two types of pallet trucks are featured, and there is data on a push-pull tractor. **(F-12)**

Market data on soap-making chemicals has been prepared and published by Foster D. Snell, Inc. The specific subjects are tallow, tallow acids, olive oil, cocoanut oil, palm oil, fish oils, whale oil, rosin, caustic soda, soda ash, trisodium phosphate, and sodium pyrophosphate. Production, consumption, imports, exports, and average annual prices are shown for each product. **(F-13)**

Liquid soaps and soap-dispensing equipment are described in a booklet made available by West Disinfecting Co. The booklet describes the various types of soaps available and devotes considerable space to newly designed soap-dispensing equipment. The publication is illustrated with photographs and schematic diagrams throughout. **(F-14)**

pH measurement and control is the subject of a bulletin prepared by The Foxboro Co. A foreword gives a clear and simple explanation of the pH value and its effects on product qaulity, plant efficiency, and operating profits. The theory applied in pH instrumentation is explained in text and diagrams. Case histories are cited to illustrate the importance of pH control. **(F-15)**

"Yesterday's Coated Fabrics" is the title of an article which appeared recently in the *Interchemical Review*. Tracing the history from as far back as 1860, the author discusses oilsilk, waterproof paulins, oilcloth, rubber-coated fabrics, pyroxylin-coated fabrics, and artificial leather. The text is supplemented with simple sketches of the early processes. **(F-16)**

Expansion joints for piping where pressure and temperature extremes exist are described in a bulletin issued by Chicago Metal Hose Corp. Information covers

---

From (give real name):

Position

Mill

Address

City State

When published print:

☐ my real name

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McGraw-Hill Publishing Co., Inc.

both free-flexing and controlled-flexing corrugated-type expansion joints in copper and stainless-steel construction. An application-data guide is included for recommending the proper expansion joint for a particular use. **(F-17)**

A microscope-type thread counter which magnifies up to 120 times is described in a folder prepared by J. Borzkowski. Besides some general information, the folder tells how the counter works independent of daylight and how the unit stops automatically upon reaching the set limit of threads. **(F-18)**

Yarn-evenness testing with an electron micrometer is described in a folder issued by Standard Electronic Research Corp. The device is pictured; and the text describes how it indicates, records, and counts. The micrometer operation and models available are also given in the folder. **(F-19)**

Bus duct, a secondary power-distribution system used to carry current from transformers to switchgear and then to motors or other equipment, is the subject of a catalog made available by Westinghouse Electric Corp. Six main advantages of the system are listed, and there are sketches of the four types of duct now available. A 2-p. center spread shows an excellent cutaway section of the duct. **(F-20)**

Coating and handling equipment for textiles, papers, films, and foils is described in detail in a 24-p. booklet published by Industrial Ovens, Inc. The booklet is a printed exhibit of their line of web-handling equipment such as letoffs, coaters, dipping machines, drive rolls, oven units, tensioning devices, and system drives. Specific systems shown include impregnators for tire cord, cotton and rayon webs, and paper. **(F-21)**

Materials-handling equipment of its entire line is shown in a catalog issued by Automatic Transportation Co. Photographs of all models are shown, and physical characteristics are given along with performance figures. **(F-22)**

A new type of catalog has been made available by J. M. Tull Metal and Supply Co. Cleverly arranged as a telephone directory, the catalog furnishes information about the aluminum, copper, brass, bronze, nickel, monel, and stainless-steel products of all types offered by the company. **(F-23)**

Linen tickets and labels for identification of work in process as well as for conventional labeling are featured in a pamphlet offered by The Monarch Marking System Co. Fifteen types of labels are shown in actual size, and there is a price list of the products. Supplementary information indicates which kind of marking machine is used with each size of label. **(F-24)**

"Practical Weft Straightening" is the title of a bulletin prepared by Winsor & Jerauld Mfg. Co., Inc. The bulletin is devoted to general considerations and description of the reflected-light type weft straightener. Details of operation are given in non-technical language which makes functioning easy to understand. **(F-25)**

The story of cellulose in its purest commercial form is told in an attractive brochure made available by Southern Chemical Cotton Co. Widely used in the manufacture of high-grade rayon and other cellulosic fibers, films, plastics, and laminates, the chemical cotton and its manufacture are shown in a series of pictures of the main plant. Samples of the bulk and sheet forms of the product are included. **(F-26)**

Synthetic lubricants and their uses as plasticizers, softeners, solvents, emulsifiers, defoamers and heat-transfer liquids are described in a booklet published by Carbide and Carbon Chemicals Corp. Complete physical properties for both the water-soluble and water-insoluble grades of these lubricants are presented. There is a special section on textile applications. **(F-27)**

Bracket-bearing synchronous motors in sizes from 30 to 1,000 hp. are featured in a bulletin released by Allis-Chalmers Mfg. Co. Shown is a table of the sizes to which bearing pressures limit the application of two-bearing motors. Vertical synchronous motors are also touched upon in the bulletin. **(F-28)**

CARDS ON THIS PAGE are for the use of mill executives in writing for manufacturers' bulletins reviewed here, as well as for additional information about items appearing in our TEXTILE EQUIPMENT NEWS, NEW DYES AND CHEMICALS, and USEFUL ACCESSORIES departments, or in the ADVERTISING PAGES.

Write in the box of any one coupon the letter and number printed at the end of the editorial item that interests you. In the case of advertisements, enter the letter A followed by the page number. If there is more than one advertisement on that page, please add the initials of the manufacturer. In every case, we'll advise the manufacturer as to what you want in order that you may receive the reply direct from him.

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McGraw-Hill Publishing Co., Inc.

Welding in the textile industry is the subject of an article which appeared in a recent issue of *Airco News*. Details of a problem in the extending of spinning rolls and hangers to accept a larger size of bobbin are given in the article. The text is supplemented with actual pictures of the operation. **(F-29)**

Static elimination with the Oxy-Neutralizer bar is discussed in a folder made available by Herbert Products, Inc. Methods of installation are shown and a complete package of all the equipment necessary for a unit is described. Installations in a battery for large plants are also discussed. **(F-30)**

Chemical yarn conditioning of cotton, wool, worsted, rayon, and mixtures is described in a folder issued by Kearny Mfg. Co., Inc. A set of three pictures shows graphically the effect of conditioning on skeins of yarn unreeled before and after treatment. Applications to spinning, warping, weaving, and knitting are discussed. Two general methods of conditioning are presented for comparison. **(F-31)**

"What every executive should know about pH" is the title of a booklet published by National Technical Laboratories. A discussion of the fundamentals is followed by a description and picture of the pH scale. There is also a discussion of the methods of measuring pH which have led to modern pH control and equipment. **(F-32)**

Tensionless continuous dyeing is the subject of a bulletin published by Ten-Co Machine Co. Ten advantages of the system are listed and described. **(F-33)**

Dispersion—the effect produced by the suspension of an insoluble solid in an aqueous fluid—is the subject of a bulletin published by Jacques Wolf & Co. A discussion of the theory involved is followed by an analysis of Lomar PW, a new dispersing agent claimed to have nearly universal applications. Properties, specifications, and the probable structural formula are included. **(F-34)**

Surface-maintenance products for the protection of practically all kinds of surfaces from any desired agent are described in a catalog issued by Steelcote Mfg. Co. The main part of the catalog is a chart which prescribes the correct product for common problems such as boiler rooms, heating plants, engine rooms, pipes, roofs, walls, ceilings, and vehicles. There is another section on surface preparation before painting. **(F-35)**

The uses of pine oils in the textile industry are covered in a 44-p. book made available by Hercules Powder Co. There are separate sections on cotton goods, woolen goods, rayon goods, hosiery, silk goods, spinning oils, and dyeing. Suggested formulas are given for each application, and procedures are also outlined for the various uses. **(F-36)**

Permanent magnetic pulleys are described in a bulletin issued by Stearns Magnetic Mfg. Co. The booklet contains features, illustrations, specifications, dimensions, capacities, and typical applications. The bulletin states that the pulleys are non-electric and can be used under all atmospheric and operating conditions for the automatic removal of tramp iron and separation of magnetic and non-magnetic materials. **(F-37)**

Dial scales for every industrial use are featured in a catalog published by The Howe Scale Co. Among the types pictured and described are bench scales, cabinet-dial floor scales, counting scales, remote weight recorders, tank scales, suspension-hopper scales, crane scales, and overhead-track scales. **(F-38)**

A booklet "Solving Steam-Trap Problems" has been published by The V. D. Anderson Co. The booklet contains detailed information about selecting the right-size trap and following the correct trapping practice for unit heaters, jacketed kettles, steam mains, and other units. Trapping theory, installation, operation, and maintenance are explained. **(F-39)**

Cloth-opening equipment is the subject of a folder issued by Mount Hope Machinery Co. The first page shows a diagram of a typical installation and how it operates. The next two pages are devoted to a discussion of the advantages and a description of component parts. The last page lists the prices of the various pieces of equipment. **(F-40)**

Rotary positive blowers are described in a booklet issued by Roots-Connersville Blower Corp. Operating advantages and principles are discussed and are accompanied by several performance curves under various operating conditions. Separate pages are devoted to the four standard types of blowers now offered. Applications pictured include one for filtering water through a sand filter in a textile mill. **(F-41)**

A dye-jig inclosure of stainless-steel construction is featured in a bulletin published by Glasaco Equipment Corp. Several advantages are listed, and the jig enclosure is shown in both the open and closed positions. **(F-42)**

Storage of lubricating oils is graphically portrayed in a recent issue of *Lubrication*. Both correct and incorrect methods of storing drums are shown. Another section deals with storage of additive-type lubricants and greases. A picture in this latter section shows how a set of lubricating-oil dispensers are located in a textile mill. **(F-43)**

Doing any exporting? An interesting booklet on the four ways of doing export business has been prepared by *Exporter's Digest*. The booklet comprises a series of "know-how" articles of particular interest to firms now starting or considering an export program. **(F-44)**

Packaging with corrugated boxes and corrugated wrapping material is the feature of a recent issue of *Package Laboratory News*. Although no specifically textile packaging problem is shown, the publication is interesting and offers several ideas for textile distributors and manufacturers. **(F-45)**

A mist-spray dampener for cotton, rayon, woolen and worsted, and linen fabrics is described in a folder issued by B. F. Perkins & Son, Inc. Important features and advantages are given along with a picture of the unit and a description of a specially designed pump which is an integral part of the unit. **(F-46)**

"Industry's 8-Ball" is the title of the lead article in a new external company magazine from the Hyster Co. The article offers efficient materials handling as the answer to the present high cost of doing busines. Another feature article describes the electric-utilities industry and the importance of equipment handling in its maintenance and growth. **(F-47)**

A new thermocouple and pyrometer accessories bulletin has been published by The Bristol Co. The bulletin contains 56 p. of detailed information on thermocouples, protection tubes, and other pyrometer accessories. A number of typical applications are illustrated. The company's complete line is indexed and listed in an easy-to-use manner. **(F-48)**

A catalog of chemicals and specialties has been prepared by Jacques Wolf & Co. It is presented as a convenient reference and lists products alphabetically under their common chemical names or trade names. A general description is included for each product, and typical applications are given. **(F-49)**

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TEXTILE WORLD, New York 18, N. Y. (Oct. '49)

Questions AND Answers

Standard Machines Print Narrow Tapes

Technical Editor:

What type of machinery is used for printing cotton tapes 7 or 7½ in. wide in two or three colors?

If they are printed on conventional roller printing machines used for calicos, how is the batch of tape prepared? Is there a special machine for batching, such as a sectional warping machine or a ribbon-winding machine?

How is the cotton tape guided so accurately over the 7- or 7½-in. engraved portions of the copper rollers? Is printing done on the line of lithowork? Do they use a die? If so, is the design in relief or intaglio? (9327)

Tapes 7½ in. wide would be printed in a regular ribbon printing machine. These machines are similar to the conventional printing machines, but the framework is much lighter and the printing cylinder is very narrow, being only 12 to 15 in. wide. The printing is done by the intaglio method, and the entire operation is similar to the calico printing you referred to.

The material to be printed is wound on a small winding machine such as a ribbon-winding machine.

As to guiding the cotton tape through the print machine, it is wound securely on a shell and this shell is held in a fixed position on a center bar by means of clamps. The center bar has adjustable collars so that it can be fitted to the bearings on the roll stand. The goods to be printed are set up close to the print machine and held rigidly in place as described. There is very little side play.

Tape material narrower than 7 in., such as the printed labels seen on towels, is printed by the same procedure; but generally the print machines are homemade. The print roller is not much wider than the tape, and the print cylinder is not much wider than the roll. A single strand of tape is printed at one time. When it is printed with vat colors, it is dried as it leaves the machine and then al-

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- . . . can be installed anywhere, in high or low ceiling rooms and at any location where needed . . . no floor space required.
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- . . . where lint is present, working parts are filter-protected.
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- . . . an ideal means for providing either "spot", "booster", or complete humidification.
- . . . factory-assembled, ready to attach to local water supply.

NOW AVAILABLE

New "MODEL 30"

. . . 3 gallons per hour

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SEND COUPON

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Questions and Answers
(Continued)

lowed to drop in a wire basket. These baskets containing the goods are then slid into a tower where they are aged.

Stripping Dye From Nylon Requires Laboratory Work

Technical Editor:

How is the best way to strip dyes and resins from nylon fabric? (9330)

Du Pont advises that so far as they know there is not a "best method." It is usually necessary to try various treatments, preferably on a laboratory scale, until a treatment that gives satisfactory results is obtained.

Here are a few pointers that Du Pont recommends:

1. The best stripping agent for acetate colors in nylon fabric is a metallic formaldehyde sulphoxylate assisted by a weak organic acid. Stripping should be done at the boil.
2. Chrome and metallized dyes can sometimes be stripped with a combination of a reducing agent followed by an oxidizing agent.
3. Vat, acid, and direct colors are often removed best by alkaline sodium hydrosulphite.
4. Some resins can be overdyed without stripping.
5. Resins can usually be stripped satisfactorily with dilute acetic or formic acid used at the boil. If this treatment fails, the next best method is to use a diluted strong acid, such as hydrochloric, at room temperature.

If the strong acid must be used, the effect of the treatment on the fabric should be determined in the laboratory before the treatment is used in the mill. The tenacity of the nylon may be lowered by the strong acid, particularly if the nylon is of the finer deniers.

Weaving or Finishing Can Cause Bow in Cloth

Technical Editor:

We weave worsted fabrics containing 4,600 to 7,200 warp ends and 60 to 66 picks of filling. Warp and filling yarn are 2/40s and 2/50s.

In all of our fabrics, a bow appears across the whole width of the cloth. As the goods are put through the wet-finishing processes, the bow becomes more and more pronounced.

Can you tell us what causes the bow? (9331)

There are a number of conditions that can cause a bow to appear in a fabric. An unbalanced construction, such as too many warp ends or picks per inch, may be the cause. In some

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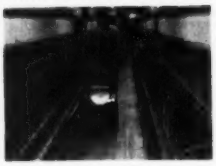

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Questions and Answers

(Continued)

cases, this trouble may be corrected by reeding the fabrics a little wider by using a reed with less dents per inch. Usually two or three inches will be sufficient.

A bow is sometimes caused in weaving by the use of double temples and too much tension on the warp. If the cloth is held out by the temples and is woven very tight, there is a possibility that the ends will be too tight, and the middle will slacken up and cause a bow in the center. Putting extra sandpaper on the take-up roll may also cause this condition. A loom whiproll that bends in the center should be braced or replaced with one that is stronger.

It is very important to have the filling in the fabric perfectly straight before the cloth goes on the take-up roll.

Finishing operations may also cause a bow. In the crabbing operation, each side of the cloth should be started straight on the roll; if not, it may cause a slack spot in the center that will build up and cause the cloth to bow.

What Is the Cost Of Direct-Color Dyeing?

Technical Editor:

Will you please let us know about what it costs to dye direct colors in a package dyeing machine in 100-lb. lots? (9332)

The actual cost of the dyestuff varies from 1¢ per lb. to 10¢ per lb., depending on the type of color used and the depth of shade that is required. The total cost varies in accordance with the cost of production, overhead, etc. As reasonable a guess as possible would be about 7¢ per lb. of yarn. This figure, of course, includes cost of material, labor, and overhead.

Finer Warp Yarns Cause "Ends-Out" Look

Technical Editor:

We are sending you two samples in which you can see what appears to be ends out in the fabric.

Please tell us what causes these defects and how to correct them. (9329)

The imperfections that seem to have the appearance of ends out are caused by much finer warp ends. If you cut a strip warpwise about ¼ in. from the imperfection and unravel the ends, you can see that one end is much finer than the others. A magnifying glass will help, but the difference can be seen with the naked eye.

Evidently some finer yarn has been

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for rayon, wool and cotton

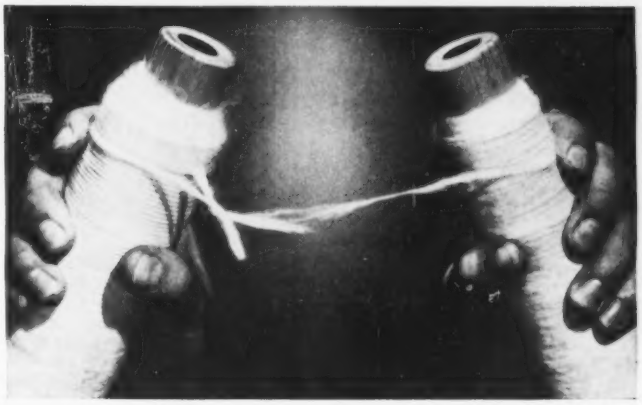

ILLUSTRATION SHOWS a test of two rayon rovings, identical except that the one on the left was treated with Du Pont "Ludox" colloidal silica. "Ludox"-treated roving with 1.07 twists per inch showed greater strength than untreated roving with 1.59 twists.

FIBERS TREATED WITH NEW DU PONT "LUDOX" SHOW MANY UNUSUAL PROPERTIES

Above is one of the advantages textile men already have obtained with new "Ludox" colloidal silica. In general, when applied to rayon, wool and cotton fibers, this new Du Pont chemical checks fiber slippage by increasing fiber-to-fiber friction, and so makes the yarn stronger. Textile men report that "Ludox" gives them, at slight additional cost, fewer yarn and fiber breaks and increased production.

Improves sizes and coatings

Many textile firms are now getting new and more useful weave-setting sizes, binders and coatings with "Ludox." "Ludox" increases adhesion of aqueous dispersions, latex for example, to many fibrous and nonfibrous surfaces. In film formers, such as polyvinyl acetate and polyvinyl alcohol, "Ludox" also gives added bond and film strength, increases friction and water resistance, and reduces dry tackiness. What's more, highly concentrated "Ludox" (30% SiO_2), won't excessively dilute such solutions.

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Du Pont "Ludox" is a 30% colloidal solution of silica particles (less than 1/1,000,000 of an inch in size), highly fluid, chemically reactive and substantially free of alkali. This highly concentrated solution minimizes shipping costs, drum handling, and storage requirements . . . shows you new paths to profit.

Where can you use "Ludox"?

Get the answer to this question by writing E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Department, Wilmington 98, Delaware. A technical representative will be glad to call and show you how "Ludox" can benefit your products. Or clip and send coupon for latest Technical Bulletin on "Ludox" for textiles.

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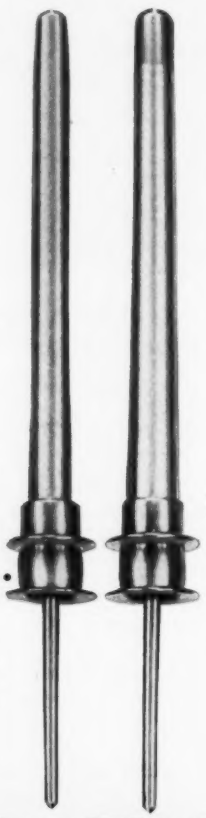

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Questions and Answers

used in dressing the warp. If the imperfection runs only a few feet, there is a possibility that the weaver is using finer yarn to tie up a broken end.

No Formula Available For Best Beaming Tension

Technical Editor:

Is there any set formula to follow for determining tension, measured in grams, for beaming warps from the dressing creel? Our woolen yarn ranges from 2½ to 4 run. (9333)

There are so many conditions governing the proper amount of tension in beaming a warp that it would be almost impossible to use any set formula. The size of yarn, quality of stock, and twist in spinning all affect the breaking strength of the yarn.

Too much tension will cause excessive yarn breakage.

A number of mills use a compressor on their warp beamers. With a compressor, you can wind more yarn on a given size warp beam without using excessive yarn tension. The yarn is also wound tighter, which helps weaving.

If you are using some of the new instruments available to measure yarn tension, you would have to make a study of the different yarns in your plant and arrive at figures that represent the grams of tension (measured by your tension device) that gives best beaming and weaving results in your case.

Many Conditions Cause Shuttle Marks on Binder

Technical Editor:

Can you give me any information that would help in eliminating shuttle marks on the front end binder of 50-in., 20-harness dobby looms equipped with parallel and regular stationary pickers? (9328)

From the limited information given, it is difficult to fix the cause of your trouble with any certainty. It is probably caused by the shuttle not being thrown straight. A reed that has humps and hollows in it or is not lined up with the box back could be one of the many causes.

Use a straight edge and line up the box backs so that a 48-in. straight-edge extends 3/64 of an inch into the reed line.

Pickers and picker spindles should also be checked. Shuttles worn on the back in the shape of a bow will cause trouble. Crankarms should be checked, and any play should be removed.

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EMERY TWITCHELL OILS
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To provide oils to meet varying finishing requirements, Emery manufactures three Twitchell Products. All of them are extremely stable, offering maximum resistance to oxidation, yellowing and rancidity. Won't corrode machines or metal parts; cause no gumminess or tackiness. *Most important,* treated fabrics retain rewetting properties indefinitely.

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Twitchell Oil 7250. All fatty-base oil imparting highest speed of wet-back. Gives soft hand . . . minimizes shade changes . . . enhances bloominess and color values. Minimum volatility, no tendency to "fog."

For MEDIUM SOFT Hand

Twitchell Oil 7240. A fatty-mineral base oil for medium soft hand is an efficient rewetting agent. Compounded to keep "fog" to a minimum.

For MINIMUM effect on Hand

Twitchell Oil 7231. All mineral base. Best where good wetting back, minimum effect on hand and greatest economy is sought. Compounded to keep "fog" to a minimum.

For REGULAR Finishing

Each of these three oils is recommended for regular finishing, for slashing, for increasing absorbency of towelling, wiping rags, paper maker's felts, etc. Twitchell 7210, 7211 and 7230 provide still lower cost oils for all types of cotton finishing where lower-quality, less-efficient assistants are adequate.

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*CONDULET is a coined word registered in the U. S. Patent Office. It designates a product made only by the Crouse-Hinds Company.

Type X Obround Condulet with Blank Cover and Gasket
Type FSC Condulet with Blank Cover and Gasket
Type GSC Condulet with Blank Cover and Gasket
Type CRT Vaportight Condulet
Type C Obround Vaportight Switch Condulet
Type TS Vaportight Trinin Switch Condulet
Type FSC Vaportight Push Button Station Condulet
Type FSC Vaportight Plug Receptacle Condulet
Type VPH Vaportight Indirect Lighting Condulet 150 – 200 Watt
Type ARC Vaportight Flexible Fixture Hanger
Type FS Vaportight Switch Condulet
Type FD Vaportight Switch Conduit
Type FBC Vaportight Switch Condulet
Type FS Two Gang Vaportight Switch Conduit
Type FS Vaportight Lighting Fixture
Type FSC Two Gang Tandem Conduit with Vaportight Switch and Plug Receptacle
Type VHB Vaportight Lighting Conduit 200 – 500 Watt
Type FCP Three-Gang Vaportight Panel Mounting Conduit with Pilot Lights and Switch
Type VLB Vaportight Lighting Fixture for GRI Series Conduits
Type GS Vaportight Lighting Fixture for GS Series Conduits
Type VG Vaportight Lighting Conduit
Type GS Vaportight Lighting Fixture for GS Series Conduits
Type VBA Vaportight Lighting Conduit with Dome Reflector 300 – 750 Watt
Type FSC Two-Gang Vaportight Combination Push Button Station and Pilot Light Conduit
Type V Vaportight Lighting Conduit for Mounting on Machines
Type V Vaportight Heavy Duty Lighting Conduit with Shatterproof Glass
Type VBA Vaportight Tank or Vat Light Conduit
Type ARC Vaportight Lighting Fixture for Obround Conduits.
Type VG Vaportight Lighting Conduit
Type VBA Vaportight Lighting Conduit with Dome Reflector 300 – 750 Watt
Type VBA Vaportight Lighting Conduit
Type VBA Vaportight Lighting Conduit with Flush Hubs
Type VR Vaportight Lighting Conduit for Mounting on a Hand Rail
Type VRJ Vaportight Lighting Conduit for Extension from Concealed Conduit
Type VS Vaportight Hand Lamp with Rubber Handle
Type VBA Vaportight Lighting Conduit with Angle Reflector 300 – 750 Watt
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Type VFC Vaportight Gauge Lighting Conduit
Type VFL Vaportight Lighting Conduit with Fresnel Lens
Type VJ Vaportight Lighting Conduit
Type VLG Vaportight Gauge Lighting Conduit Fluorescent
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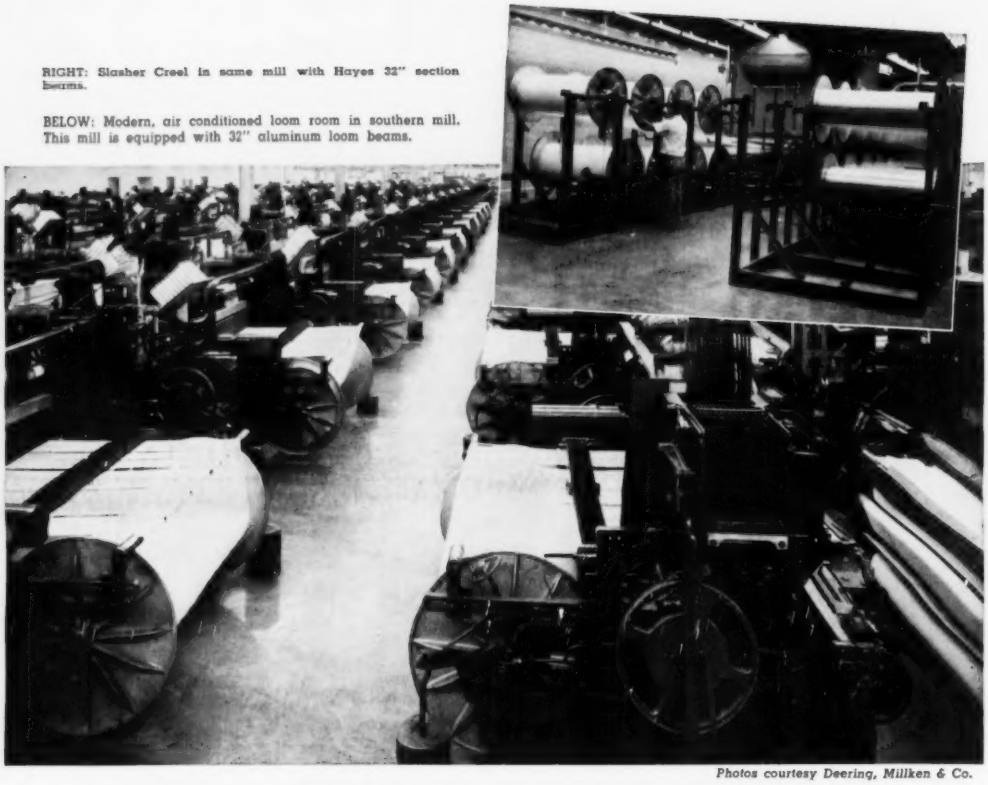
RIGHT: Slasher Creel in same mill with Hayes 32" section beams.

BELOW: Modern, air conditioned loom room in southern mill. This mill is equipped with 32" aluminum loom beams.



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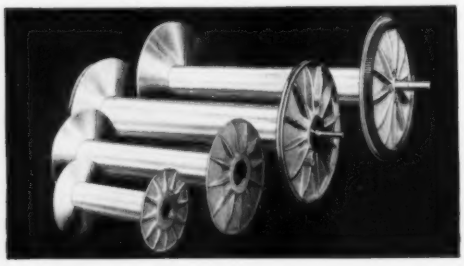

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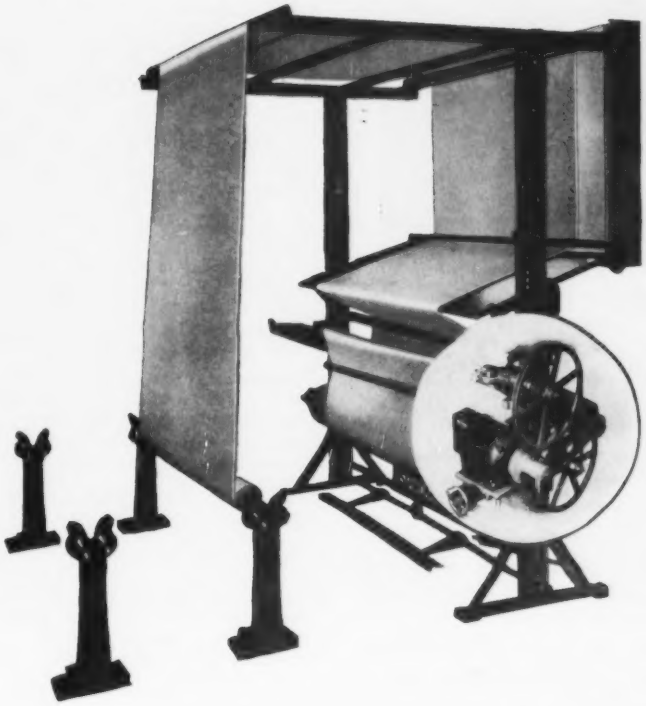

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Insert shows our V Belt Variable Speed Drive, manually controlled, which permits variation in yardage speeds from 11 yards per minute to 57 yards per minute.

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Constant and uniform daylight for your Cloth inspection is provided, 24 hours a day, when you use our New Standard Fluorescent Lighting Fixtures.

Efficiency is greatly increased and eye fatigue is eliminated, as there is no glare or eye strain. There is an even distribution of light, controlled by 9 tubes, and perfectly defused by indestructible, white opal Plexiglas. You can have as little or as much light as the particular fabric requires.

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A 13' light cord and plug is furnished with each fixture. Two brackets, at the top of fixture are provided to be used with chain or other mounting to attach to ceiling or Inspecting Machine.

All wires are centralized in the back of panel and the Plexiglas can be removed from the front side of the Fixture enabling the replacement of tubes.

Overall cabinet dimensions, 57" x 32" x 6". This size cabinet will handle goods up to and including 54". Larger size fixtures can be manufactured upon request. Net weight, 88 lbs. — Shipping weight, 150 lbs.

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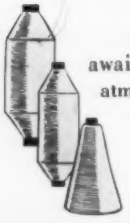

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Controlling Lint

(Continued from page 137)

a force of air is used, the ends will become tangled, a condition usually resulting in one of the ends tearing out of the carrier and causing a dropout.

After a machine has been blown clean, the knitter should carefully examine the ends to see that they are not tangled. Porcelain openings in the yarn carrier and on the spider should be inspected for lumps. If the openings are not cleared of lumps, a dropout or a tight line in the fabric will occur almost immediately.

When a machine is blown, the lint falls on the floor and on adjoining machines. If the adjoining machines are idle, lint will settle on them very quickly, creating a condition that should not be neglected. It takes only a few seconds to clear the idle machines of lint. If this cleaning is not done, the idle lint may be disturbed by subsequent blowings and accidently land on a machine in operation.

CHECKING ACCUMULATIONS. Preventing the accumulation of lint on the machine while the machine is in operation is the key to the entire lint-control problem. Although this checking is not easy, there are several devices which effectively retard the accumulation of lint.

1. Compressed air can be directed through a piece of metal tubing having a very small opening. This tubing can be attached to the machine in such a manner as to direct a steady stream of air at the needles. While this will not keep the needles entirely clear of lint, it will prevent large lumps from accumulating on top of the cylinder.

2. Another piece of tubing, judiciously placed, can direct a stream of air down on the sinkers and help to keep the inside of the cylinder clean. In any case, the cylinder has to be blown with an air hose at the end of the piece so as to start fresh.

3. The top stop-motion is another area where lint has the tendency to accumulate rapidly. Probably the best method of keeping this area clean is by continually having a downdraft of air directed against the stop-motion. Downdraft also has the beneficial effect of keeping the tops of the cones free from lint. Downdraft can be created by mounting a four-bladed fan directly over the stop-motion. While the length of the blades depends upon the diameter of the stop-motion, in any case the speed of the fan has to be very slow. All that is needed is a very slight current of air to keep the stop-motion clean and yet not tangle the ends. Mills using fans report that with their machines operating 24 hr. a day five days a week, the

VAN VLAANDEREN
has a superior
NYLON
HEAT SETTING MACHINE

It's different! It's better!

Everyone agrees today that heat setting of nylon broadgoods is essential to bring out its inherent advantages as a fabric.

Van Vlaanderen engineers—always pioneers in superior processing developments—have approached the problem of heat setting in an entirely new and better way. They have produced the first heat setting machine designed to give complete uniformity of treatment; the first machine designed on the advanced principle of *circulated heated air as the setting agent.*

***Circulated heated air*, permeating every fibre of the goods, uniformly and simultaneously effects setting — without any part of the machine or goods *ever* exceeding the setting temperature. This method results in better set fabrics; stable in dimensions, free from sagging, shrinking or stretching, and having great resistance to wrinkling.**

Circulated heated air* permits simpler design and easier, more reliable control; less possibility of mechanical failure and (of great interest to the finisher) *lower initial and operating costs.

***Circulated heated air* is, in our considered opinion, the most satisfactory of the various methods of heat treatment.**

We would like you to see this machine in operation. Why not write us now?

VAN VLAANDEREN MACHINE COMPANY

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World's largest manufacturer of machines for processing modern fabrics

DOORS

That Save Dollars

Stanley Door Controls pay for themselves times over—by speeding up plant traffic—cutting materials handling time—making heating, humidification and air conditioning more efficient—eliminating damage to doors, products and trucks from banging.

Actuated by a photo-electric "eye", Magic Doors open instantly and automatically on approach, stay open till the passage is clear, then close quickly and silently. Multiply the seconds they save by all the doors in your plant—by all the times they're opened and closed in a month—and you can see why it will pay *you* to install Stanley Magic Doors. For full information, mail this coupon now.

Stanley Door Controls, "Magic Doors", have been proved efficient in plants all over the country. They operate either swinging or sliding doors—or a combination of the two—and can be designed to suit practically any requirements of space or location.

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The Magic Door
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HARDWARE • HAND TOOLS • ELECTRIC TOOLS • STEEL STRAPPING

The Stanley Works, Magic Door Div., 107 Lake St., New Britain, Conn.
Gentlemen: Please (|) send full information on Stanley Magic Doors.
( ) Have your representative call on us.

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City ..... State .....

stop-motion has to be blown with an air hose only once a week as compared to every five hours without a fan.

4. In a mill having 40 or 50 machines, mounting a fan over each machine might prove too costly. In addition, an annoying breeze might be created if all the fans were in operation at one time. Perhaps it would be more practical for such mills to attach the fan to a monorail which could be suspended over the rows of machines. An electric motor would drive the fan and also move it along the monorail. A similar system is used in spinning rooms, where a traveling fan keeps the frames clear of lint.

Inclosed Jig

(*Continued from* page 121)

the need for a newer and more efficient unit for dyeing small yardages.

A small-yardage unit should be able to produce a variety of shades with all types of dyes and be competitive with the large-production units as regards cost. It therefore seemed reasonable to consider an improvement in the jig, since it has long been the means for dyeing cloth in small units.

CLOSED JIG. The closed type of jig was developed to meet this need. It already has proved its efficiency and very likely will be used more and more in the future.

This new type of improved jig includes all the essential features of the larger continuous units. It will dye rolls running from 50 to 1,500 yd. each. It is of the tensionless type, is automatic, and can be fully controlled through instrumentation to practically eliminate manual operation.

The unit is entirely inclosed by a metal hood placed over the top. This inclosure confines both heat and vapors from the dyebath. An even temperature can be maintained, and the top prevents the loss of steam and chemicals during the dyeing procedure. By eliminating air exposure, there is less danger of bad selvages and uneven dyeing with vat colors. Chemical consumption is lessened, due to the need for less hydrosulphite.

The inclosure or hood may be of two types. The first is of a rounded construction and the other is a flat, sectional hood with a peaked top. Both are equipped with conductors or drains that carry off condensate coming from the dyebath so that no dripping on the cloth roll occurs. These conductors are arranged so that they convey the condenaste towards each end of the jig and return it to the dyebath.

The inclosed jig also prevents the alternate cooling and heating of the

NEW SQUARE D "PLUG-IN" CONTROL CENTERS

above
• Size 2 plug-in starter unit

right
• Disconnect operator handle

NOW *... take full advantage of Control Center convenience, safety and economy . . . Square D "PLUG-IN" centers are new from the ground up, with all basic features plus . . .*

NEW **INSTALLATION ECONOMY.** Wiring channels are all accessible from front without removing units. Two big vertical channels per section permit separation of power and control circuits.

NEW **SPACE ECONOMY.** Up to six starters fit in 20" x 20" x 90" sections. Standard 20" depth sections will accommodate starters through size 5.

NEW **SAFETY DISCONNECT OPERATOR.** One to four padlocks will lock both door and disconnect in either "ON" or "OFF" position. On closing unit door, handle moves to indicate position of disconnect. When not padlocked, authorized person with tool can release door interlock to inspect control without interrupting power.

NEW **FLEXIBILITY.** For simplest plant conversion or maintenance, plug-in units slide on guide brackets and positive pressure stabs grip round vertical busses. Plant conversion is simplified and minor changes often will not require shutting off power.

Square D's NEW Control Centers are also available in dust-tight and weather-resistant enclosures. Contact your nearby Square D Field Engineer for complete information, or

Write **Square D Company, 4041 N. Richards Street, Milwaukee 12, Wisconsin**

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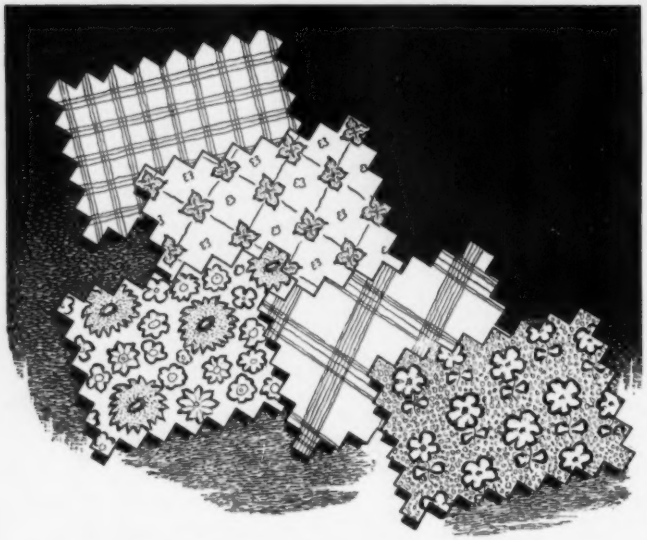
SQUARE D COMPANY CANADA LTD., TORONTO • SQUARE D de MEXICO, S. A., MEXICO CITY, D. F.



Pennsalt Hydrogen Peroxide

- **SAFE**—soft handle, high tensile strength fabrics
- **ADAPTABLE**—to modern bleaching methods
- **ECONOMICAL**—on the basis of over-all costs
- **SUITABLE**—for all bleaching problems

Pennsalt Hydrogen Peroxide (H_2O_2) is a bleaching agent that is as versatile as it is economical! Textile Manufacturers find it an ideal bleaching agent for wool, silk, rayon, cotton yarns and woven cotton fabrics.

In the manufacture of woven cotton colored yarn materials such as shirtings or chambrays, Pennsalt H_2O_2 performs a dual function:

- *Helps bring up backgrounds to sparkling whiteness*
- *Develops the vat color to a more insoluble state*

And when you deal with Pennsalt, you are assured of quality products at a fair price. That's because Pennsalt is a *basic* producer . . . manufacturing its products from the ground up! Our experienced representatives may help you get better results...at lower cost...with Pennsalt Hydrogen Peroxide. Write: Heavy Chemicals Division, Pennsylvania Salt Manufacturing Co., Philadelphia 7, Pa.

Other PENNSALT Textile Chemicals
Caustic Soda • Soda Ash • Sulfuric Acid
Hydrochloric Acid • Chlorine
Perchloron® • Sodium Hypochlorite
Chlorinated Lime (Bleaching Powder)
Carbon Bisulphide • Ammonium Persulphate
Potassium Persulphate
Anhydrous and Aqua Ammonia

PENN SALT
chemicals

jig roll, such as occurs in the open jig. Uneven cooling of the jig roll does much to prevent "breaking" of color.

GOOD DYEING RESULTS. Results equal in fastness and uniformity to those obtained on the new continuous ranges can be obtained on the inclosed jig. In fact, certain advantages accrue: chemical cost is low, cleaning time is reduced to a minimum, high-temperature dyeings are possible, and maximum penetration can be obtained on all cotton goods.

The quick change from one shade to another for small lots is particularly appealing, since it greatly reduces the dyer's cost as compared to the changing over on the larger continuous ranges. Certain synthetic fabrics can also be satisfactorily dyed in fast colors. Compared to open jigs, the same depth of shade can be developed in a shorter length of time.

The boxes, hoods, immersion rolls, and expander bars of the inclosed jigs are constructed of stainless steel. Beams are covered with semi-hard rubber. The hood is easily removed with an automatic hoist when jig rolls are put up or taken down.

A box of approximately 55-gal. volume reduces chemical consumption. This box is equipped with closed steam-coil heating units automatically controlled. An ample water supply is available, as well as large drains for quick changing of baths. These features make it possible to dye all classes of cotton piece goods of any quality, as well as many synthetics, in short periods of time with uniform results, economical cost, and no fabric distortion.

Ultra-Thin Section

(*Continued from page 141*)

icals, a monomer and a catalyst. They make a clear solution which reacts to form a polymerized base which can be easily cut and readily removed from the specimen itself.

2. The embedded specimen is cut by utilizing a new device in conjunction with a conventional microtome. The device consists of a brass block having a plug into which the specimen is mounted. Behind the plug is a valve leading to a source of carbon dioxide gas, which enters the specimen chamber and cools it. Then the microtome blade is brought up manually to the specimen. Subsequent atmosphere warming of the brass block causes block to expand, and the specimen is pushed outward by molecular expansion and then sliced thin by strokes of the microtome. After cutting, the sections are floated on water to take out the folds, and then

These BECKMAN INSTRUMENTS

can reduce waste . . . improve uniformity . . . save time . . . cut costs . . . in your textile operations

The Beckman Model "R" Automatic pH Indicator—ideal for automatic process control.

BECKMAN pH INSTRUMENTS are recognized throughout industry as the most advanced, most versatile and most accurate pH equipment available.

Through the scientific application of Beckman pH Control you can perform many textile operations more efficiently and more uniformly, with less waste and better product quality. Typical applications include . . .

DESIZING — to prevent fiber damage when removing sizing materials.

BLEACHING — to control alkalinity, whether using caustic or peroxide.

MERCERIZING — to prevent damage by too-strong caustics.

DYEING — to control acids and alkalies to insure even dyeing and protection of cloth.

SCOURING — to control alkalinity of soap solutions.

CARBONIZING — to insure proper acid concentration for adequate cleaning.

SOAKING — to insure neutral soaking solutions prior to "throwing" rayon or silk.

LABORATORIES — for varied research and control operations.

. . . and many other applications.

There is a Beckman pH Instrument for Every Requirement

— from small meters for portable plant and field use to fully automatic equipment for large-scale process control applications. Portable instruments include both battery and AC operated types, and an unusually wide selection of Beckman Glass Electrodes is available to meet every application.

Helpful Booklet. *Send for this free booklet "What Every Executive Should Know About pH" . . . an informative non-technical explanation of Beckman pH Control and applications.*

BECKMAN QUARTZ SPECTROPHOTOMETER —

This instrument is rapidly becoming the standard equipment for color control, color matching, color specifying and other color standardizing operations in the textile industry. It can be used either for exact-color analyses by reflectance measurements on textiles and other opaque materials . . . or for transmission and density measurements on dye fluids and other transparent solutions . . . supplying a permanent record that can be filed for future reference. It also can be used for analyzing chemical solutions quantitatively. By all standards, the Beckman Quartz Spectrophotometer is not only the most advanced, most compact, most versatile spectrophotometric equipment available, but also the least expensive. It is unusually simple to operate and no highly-trained personnel is required.

- The Beckman Quartz Spectrophotometer covers a wide spectral range — from 220 mmu in the ultraviolet, through the visible, to 1000 mmu in the infrared — the complete range of interest in textile applications.
- Measurements can be made to unusually narrow spectral band widths, permitting more accurate color analysis and differentiation.
- Scale can be easily read to 0.1 mmu in the ultraviolet — to 1.0 in the infrared.
- For maximum convenience, portability and accuracy the monochromator, light sources, phototubes and electrical circuits are all enclosed within one compact case.
- Stray light effects are held to less than 1/10% over most of the spectral range, assuring maximum accuracy.
- Direct readings in percent transmission and density can be made simultaneously.

There are many other unique advancements incorporated into the Beckman Quartz Spectrophotometer. Write for full details.

Beckman Model "DU" Quartz Spectrophotometer.

LET US STUDY YOUR INSTRUMENTATION PROBLEM

Beckman equipment includes other instruments besides those outlined above. So, whether yours is a problem in pH control, color control or other specialized textile applications, let our trained engineers study your needs and make recommendations on the equipment best suited to your requirements. No obligation, of course.

Send for descriptive literature on Beckman Instruments! Beckman Instruments, National Technical Laboratories, South Pasadena 12, California

BECKMAN INSTRUMENTS CONTROL MODERN INDUSTRIES

Soot and dust can't invade this spinning room

AAF Electro-Cell provides super-clean air to safeguard product quality

MILL operators have found that clean air returns a clear profit in the form of fewer rejects and seconds. That's why the air entering this spinning room is not only conditioned for temperature and humidity but completely free from damaging soot and dust. And here, as in so many mills, the job of delivering this super-clean air is entrusted to AAF Electro-Cell Electronic Precipitators.

In addition to its high efficiency, the Electro-Cell has many design features that appeal to the practical operating man. Removable collector plate cells permit manual washing and re-oiling in place, removing for cleaning in a special tank or automatic washing, drying and recoating with minimum interruption to operation.

Electro-Cell's sectional construction cuts weight, reduces number of electrical connections, protects wiring from dirt and water. Full height ionizers minimize electrical losses, reduce ozone and simplify ionizing wire replacement.

The complete story of Electro-Cell's high efficiency and low cost operation is contained in Bulletin 252. Ask your local AAF representative for a copy or write to—

AMERICAN AIR FILTER COMPANY, INC.

304 Central Avenue, Louisville 8, Ky.

In Canada: Darling Bros., Ltd., Montreal, P. Q.

AAF

AIR FILTERS

AND ELECTRONIC PRECIPITATORS

floated onto clean microscope slides where they dry.

In preparing specimens for the electron microscope, the sections are dried on a glass slide, and the plastic is removed. A clear, thin film of collodion is allowed to flow over the slide and to dry at room temperature. The collodion film containing the sections is stripped from the slide by floating on water, and an extremely fine wire mesh screen is placed over each specimen for support. The ultra-thin sections of some of the specimens are suitable for shadow testing with a very thin layer of evaporated and condensed chromium. This technique produces additional contrast as well as a three-dimensional aspect to the structures.

Sliver Tester

(*Continued from page 131*)

MACHINE SETUP. The photographs show how Parkdale Mills sets up the electronic tester for roving. Machine recording is balanced with the measuring circuit. The roving strand is then placed between two of six condenser plates which are known as a measuring comb. With the material in the proper plate for size, the machine needle should roughly indicate zero. But the needle can be set more precisely at zero by running a short length of strand through at high speed and by simultaneous adjustment of the "average-value" knob.

The recorder graph of the Uster tester is calibrated in percentage of variation, plus or minus. No calculations are necessary to read the graph which outlines the variations of strand as they are amplified by the tubes. Variables of material feed, graph-paper feed, and machine sensitivity may be preset to provide half-inch-by-half-inch to yard-by-yard testing.

Two usual types of tests are run as follows:

1. With a material feed of 4 yd. per min., a paper feed of 2 in. per min. and a "normal" setting on the machine, 10 yd. of strand is used for a test which can be completed in less than 3 min. and recorded on 5 in. of paper. Sections are measured in periodic lengths of 2 to 3 in., and each 2-in. length is measured against every other 2-in. length.

2. With a material feed of 8-yd. per min., and the "inert" setting on the machine, yard-by-yard averaging tests are run for long lengths of material.

The paper feed can be adjusted for 1, 2, or 4 in. per min. The paper feed chosen is circled on the graph paper by the operator (see illustration). The material feed, adjustable independently of the paper feed, can

For more information, write direct or use Reader Service post card.

COPRANTINE COLORS

THE WAY TO BETTER

Wash and Light Fastness

ON

VISCOSE RAYON AND COTTON
WOOL BLENDS
ACETATE BLENDS
IN
YARNS, HOSIERY, KNIT GOODS
WOVEN FABRICS

ESPECIALLY RECOMMENDED FOR PACKAGE MACHINE DYEING

TEXTILE BANKING COMPANY

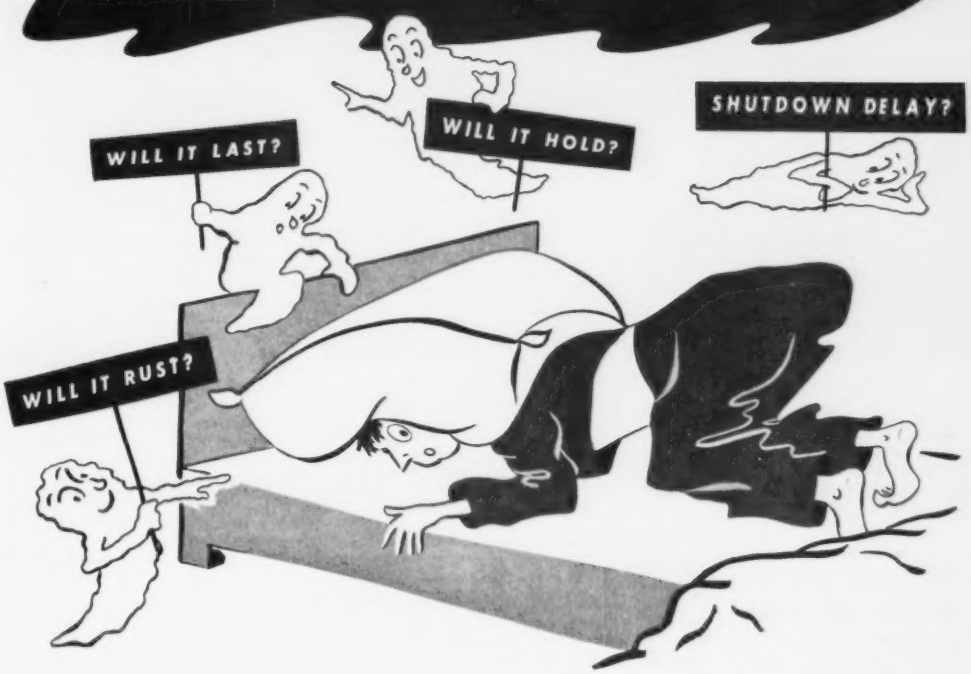
Inc.

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

haunted by welds?



You can avoid "nightmares" about corrosion near the welds in textile equipment by using Armco "ELC" Stainless Steels. And you save money at the same time.

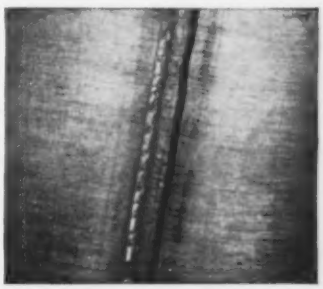
These new Armco Stainless Steels (Types 304 ELC and 316 ELC) are as *corrosion resistant adjacent to the welds* as elsewhere. The reason is that the extra-low carbon content (.03% maximum) of these grades eliminates intergranular corrosion by preventing harmful carbide precipitation from welding. Areas near the welds staunchly resist corrosive attack when your equipment is in service.

Equally important to you, Armco "ELC" grades *cost less* than corresponding types stabilized by the addition of columbium or titanium.

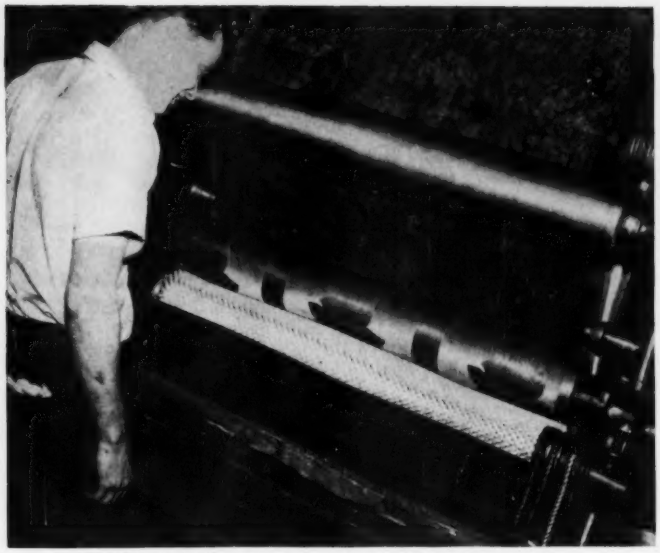
WIDE RANGE OF USES

Armco ELC is ideal for corrosive conditions at service temperatures below 800° F. It can cut costs and prolong service life in agers, bleaching machines, and fulling machines; for carbonizing equipment, dye kettles and piece carbonizers (acid tank) in wool processing equipment.

Find out how you can take advantage of the special properties of this steel. Just write us, or ask your equipment fabricator to inquire. Armco Steel Corporation, 3959 Curtis Street, Middletown, Ohio. Export: The Armco International Corporation.



ARMCO STEEL CORPORATION



METLKOR* nylon bristle furnisher brush, used for color application in textile printing.

For Greater Efficiency

and longer brush life, turn to - - -

METLKOR TEXTILE BRUSHES ARE USED:

BY PRINTERS for furnishing color, brushing prior to printing, blanket washing and drying, and soaping in screen printing.

•

BY COTTON AND WOOLEN MILLS for carding, shearing, brushing, and reed cleaning.

•

BY WOOLEN AND WORSTED MILLS for flock raising and laying, carding, combing, singeing, pressing, teasel cleaning, teaseling, polishing and steam brushing.

•

BY CARPET MANUFACTURERS for carding, furnishing, shearing, sizing and brushing.

•

ALSO FOR MANY SPECIAL PURPOSES.

RENEWABLE BRISTLE

JENKINS METLKOR

*(Trade mark Reg. Pending)

TEXTILE BRUSHES

They're the highest quality brushes we have seen in our more than 70 years as manufacturers of industries brushes exclusively.

•

Their CORES of aluminum or cold drawn steel are practically indestructible. They do not sag, break, or get out of alignment, as wood cores will.

BRISTLE is wound on these cores with specially formed metal strips, in which tufts of bristle are firmly held and sealed in with special plastic cement, by a patented process.

BRISTLE IS RENEWABLE when it wears down.

NYLON BRISTLE is available for longer wear and easy cleaning.

Get the full story of METLKOR Textile Brushes from—*

M. W. JENKINS' SONS, Inc.

Specialists in Manufacturing Industrial Brushes since 1877

CEDAR GROVE ESSEX COUNTY NEW JERSEY

*(Trade Mark Reg. Pending)

be varied at 1, 2, 4, and 8 yd. per min. The ratio of material feed to paper feed is adjustable from 10-to-1 to 320-to-1, depending upon the settings selected. With a 4-in.-per-min. paper feed and 8 yd.-per-min. material feeds, it is possible to show 1 yd. of material length on ¼ in. of graph paper. With a 4-in.-per-min. paper feed and 1 yd.-per-min. material feed, it is possible to "graph" a 1-yd. length of material on 4 in. of paper.

ORGANIZED TESTING. As shown by tables, which are from a Southern mill laboratory, evenness testing may be organized so that all production machines from the card to the roving frame may be tested periodically. Once-per-month schedules are followed by one mill.

Systematic followup of tests made in another mill indicated that the critical points to watch for evenness troubles were:

Cards—coiler heads and points beyond the web stage.

Drawing—condition of rolls and roll coverings; settings.

Combers—condition of roll and roll coverings; settings.

Frames—rolls; weighting; settings.

One mill check-tests every card, draw frame, comber, and roving frame every two months. In addition, all machines are checked after overhauling. This mill has established a long-range record of the results obtained from each machine and has an indication of the quality progress made as far as evenness is concerned.

No set standards of evenness appear to be in general use with the new tester. One mill has used Saco-Lowell standards. It appears that each mill could set its own standards for a particular machine, stock, and quality requirements.

The evenness results shown in the tables are not suggested as "good" or "bad" but merely indicate the progress made at one particular mill by systematic sliver testing.

Measured Motion

(*Continued from page 123*)

application-data chart; or he must define the conditions and determine a variation of the standard time for them.

Other pointers for the timestudy man seeking to use or to revise methods-time measurement for his purposes consist of:

1. Observing each element of the operation individually and breaking that element down into basic motions before proceeding to the second element.

2. Keeping limiting motions sepa-

Get more uniform results from wet decating

Illustration shows 3 Foxboro "Packaged" Control Panels on David Gessner Co. (Worcester, Mass.) wet decating machines in a large New England woolen mill.

with this ADVANCED-DESIGN AUTOMATIC CONTROL

Here's the latest development to help you make wet decating more precise and easier to handle than ever before. Foxboro's Automatic Control System now provides an important improvement in the heat treating cycle. It starts the timing after the fabric reaches correct temperature instead of at the time steam is first turned on. This means full, top-level heat for every part of fabric . . . assures maximum uniformity of results.

SIMPLE SET-UP

Only three simple settings are required at the start of a run, no matter whether run lasts hours or days. Settings easily varied to meet changes in formula.

PUSH-BUTTON OPERATION

Once the settings are made and a master switch thrown, all the operator does is push a starter button. This automatic control then performs 16 separate operations . . . all precisely timed . . . to complete the process.

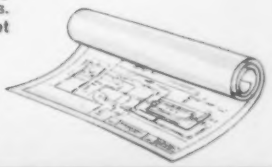
EMERGENCY-PROOFED

Pushing master switch lever to "OFF" closes all valves and stops process. Returning master switch lever to "ON" resets all timers to beginning of cycle.

COMPLETE PRODUCTION RECORD

In addition to more efficient control, this Foxboro system provides a complete production record. Chart drive by-passes master switch allowing chart to keep running.

Foxboro Automatic Wet Decating Controls are available as "packaged" control units for either new or existing machines. Write for complete details. **The Foxboro Company, 84 Neponset Avenue, Foxboro, Mass., U. S. A.**



SEND FOR . . . detailed diagram of Foxboro advanced-design, automatic wet decating control installation . . . or similar installation diagrams of Foxboro semi- or full-decating control.

FOXBORO
REG. U. S. PAT. OFF.

RECORDING · CONTROLLING · INDICATING
INSTRUMENTS

TOLHURST
60" CENTER-SLUNG EXTRACTORS

Tolhurst's 60" Center-Slung Extractor assures safety, speed and convenience in extracting carbonized wool and other acid-treated materials. With a total capacity of 32.2 cubic feet, this efficient extractor easily turns out from two to four loads per hour. Rubber covered basket and rubber lined case. Safety cover is standard equipment. Automatic timer available at extra cost.

Modern textile mills find Tolhurst's 60" Center-Slung model in standard construction equally efficient in extracting piece goods, package yarn, skein yarn, raw stock, underwear tubing, wool felting, hats and rugs.

TOLHURST 40" and 48" EXTRACTORS

Two smaller Tolhurst machines are especially designed for use where acid conditions prevail. They can be constructed of bronze, stainless steel, monel, steel rubber covered or other applicable materials. Available in 40" and 48" diameters. Timer, automatic brake and safety cover are standard equipment.

FREE! NEW CATALOG

Write today for the 20-page Tolhurst Catalog, featuring all Tolhurst extractors for the textile industry. Illustrations, specifications, dimensions, floor plans.

TOLHURST CENTRIFUGALS
Division of AMERICAN MACHINE AND METALS, INC.
East Moline, Illinois
American Machine and Metals (Canada) Ltd., 1144 Weston Road, Toronto, Canada

rate from non-limiting motions. Limiting motions are those that cannot be combined, overlapped, or performed simultaneously.

3. Studying the book, "Methods Time Measurement"* carefully so that a full understanding of the principles involved may be obtained.

* McGraw-Hill Book Co., 330 W. 42nd St., New York.

Pointers for Supervisors

(*Continued from page 153*)

like I was back in the Army. Yes, we'll avoid that. Now, about those V-belt drives for the bobbin winders———"

After Jim Langley left, the general manager let his thoughts wander over what they had been discussing.

". . . sounds too inefficient; time wasted in getting opinions."

"Jim is the best super I've ever had. It's my duty to see to it we have a good man in that job, just as it's up to our board of directors to keep me on my toes. Jim knows the mill and he's especially good when it comes to getting his supervisors to work for him. If he has a fault, it's letting them decide their own problems and doing things their way even when he knows they are wrong. He says we all learn through our mistakes; if we don't make mistakes, we don't learn — he wants his boys to learn.

"Funny thing about Jim. He had only an average formal education but he can make some of the most profound observations I ever heard—seemingly without knowing he's doing it. His ABC approach to problems always gets down to fundamentals, while I'm lost in the clouds trying to figure out a complex approach. One of these days I'm going to ask him what his problem-solving formula is.

"Take this idea of his for improving our supervision. Fundamentally, it's the age-old ideal of democracy. Democracy in industry. It works in government, but I've never thought of it being applied to business. Sounds too inefficient; time wasted in getting peoples' opinions when we should be taking action.

"That speaker at the club the other day compared individual opportunity in Russia, the status of the factory employee, with what we have. We have more material things, it's true; but as human beings with the right to participate in their own destiny, are our employees any better off than the workers in their state-controlled

only WEST LASTINCOTE was chosen

TO COVER 750,000 SQUARE FEET OF FLOOR SPACE IN ROBBINS CLOTH MILLS 3 BIG PLANTS!

"CONCLUSIVELY BEST BY COMPETITIVE TEST" Because heavy textile traffic is *tough* on floors—the floor finish has to be even *tougher!* . . . So in experimenting with a floor finish for its maple floor in its new plant in Aberdeen, North Carolina—the Robbins Cloth Mills insisted first of all that it be greatly *wear-resistant*. Besides which it had to possess a hard, long-lasting lustre—prove easy to apply and maintain—and to accomplish the greatest possible coverage at minimum cost.

"Test panels" of a half-dozen competitive floor materials were taken and studied—*and only WEST LASTINCOTE made the grade on ALL vital counts!*

A convincing enough test for LASTINCOTE? Ordinarily, yes—but not for the company's other two plants! Each, in turn, tested LASTINCOTE separately . . . the result?

The total floor area of all three plants, comprising 750,000 square feet, is beautifully protected by three coats of WEST LASTINCOTE.

What LASTINCOTE is!

LASTINCOTE is a hard, brilliant finish particularly created for textile floors of every type. A clear sealer, it has extra penetration power—seeps deeper into every floor-pore to *build in* added resistance and durable beauty. Alkali soaps and other floor hazards won't affect it—nor will most acid solutions. Easily applied with a lambs-wool applicator, it adds trouble-free maintenance to extremely low-cost coverage.

WEST DISINFECTING Company

42-16 West Street, Long Island City 1, N. Y.

FREE! PLEASE CLIP TO YOUR BUSINESS LETTERHEAD

WEST DISINFECTING COMPANY
42-16 West Street, Long Island City 1, N. Y.

Gentlemen:
Kindly arrange for a free, non-obligating demonstration which will prove LASTINCOTE "Best by Competitive Test." Also send descriptive literature.

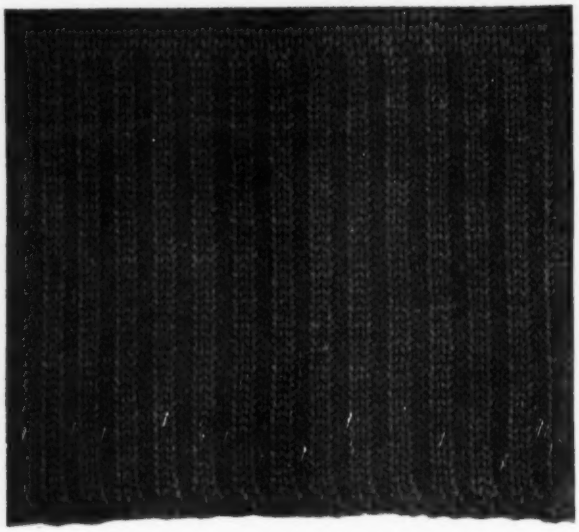
Name _____ Position _____

Street _____

City _____ State _____

beautifully protected by three coats of WEST LASTINCOTE.

The SWEATER with the
"Perfect Racked Edge"
As Knit on the
LEIGHTON TRANSFER MACHINE



Note the even straight edge on the sample cuff above.

The absence of a welt stitch in such a Racked Edge results in a more Flexible edge—an edge which will "give" and yet will hold its shape.

Perfect Racked Edges are adaptable to either 1 & 1, 2 & 1, or 2 & 2 Cuffs.

Also available are such Leighton features as:— selective rack, two or three finger stripers, separating course, and individual stitch adjustments.

Five to ten cuts
Four or six feeds

See the Leighton Transfer Machines in operation and see the "Perfect Racked Edge".

LEIGHTON MACHINE COMPANY
ESTABLISHED—1873
LEIGHTON
MANCHESTER NEW HAMPSHIRE
INCORPORATED—1894

factories? Do the advantages of democracy really make themselves felt in our mills where our people spend over half their waking hours?

"Glory, the idea is frightening. But I still don't see how you can have efficient management under such a system. It will be interesting to see how Jim works it out."

Plumbing Fixtures

(*Continued from page 127*)

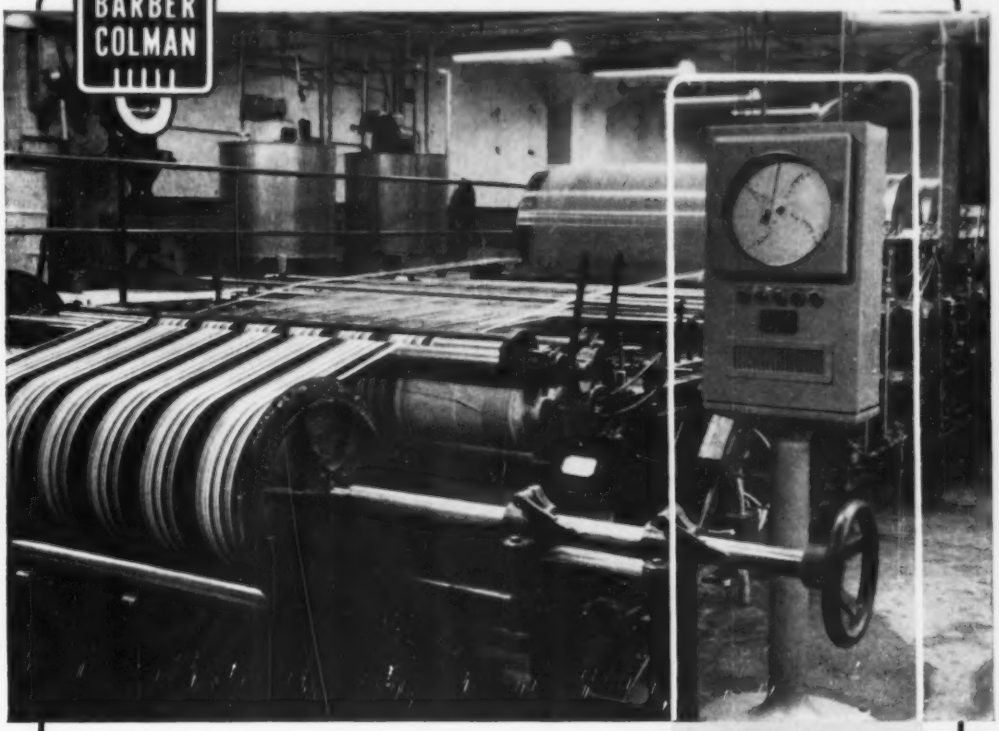
on the fixture. The old standby, the "plumber's friend," the rubber suction plunger, should be on hand at all times. Stoppages can usually be cleared quickly by using this tool. Stopups can be avoided almost entirely if all fixture drains are treated monthly with a good caustic lye solvent compound. Never allow the solvent to remain in the bowl. Immediately flush any surplus into the trap. When directions are followed carefully, no harm can come to the fixture from use of this material.

If drains are allowed to become badly clogged from lack of proper maintenance, it may be necessary to disassemble traps entirely to clear up a clogged condition or to use a special plumber's drain cleaner to reach the clogged area. This clogged condition may extend into the piping for some distance beyong the trap, because the slow movement of the water allows solids to settle out; and eventually it may be necessary to tear out walls and piping.

ACCUMULATIONS. If fixtures are frequently and thoroughly cleaned, the surfaces will remain bright and glistening. If cleaning is neglected, however, certain substances may build up what appear to be stains on the surface, especially in areas that have mineral-bearing waters. If the fixture is of an acid-resisting material (all vitreous china is acid resisting; certain enameled-iron fixtures are acid resisting, and will be so marked or initialed), a mild acid solution may be used to remove the surface accumulation. An oxalic solution of 5% strength may be swabbed over the affected surface, and then rinsed off with clear water when the stain has dissolved. If the accumulation is extremely bad, a 10% solution of muriatic acid should be used. Use rubber gloves when applying this solution and take care not to leave the acid on chromium parts, for the acid will corrode the chromium if allowed to stand.

On a hot day, the valve on a drinking fountain may be opened and closed more often than any other valve in the building. Sometimes drinking-fountain valves or handles

BARBER COLMAN



ELECTRONIC MOISTURE CONTENT CONTROLLER

The new and improved, high quality, *all-electronic* unit shown here is applicable to all types of warp as processed on slashers having any type of variable-speed drive. In operation, a roller in contact with the warp as it leaves the slasher continuously measures the moisture content and, through the automatic electronic circuits of the Controller, causes the speed of the slasher to be adjusted so as to maintain uniformly the desired moisture content. The Controller is a proportioning type instrument equipped with automatic reset, hence the moisture content can be controlled at a constant level without "hunting" of the variable speed drive.

Barber-Colman engineers, who have gained "Know-How" through years of experience, will at your request and without obligation, make a survey of your slasher room. If Barber-Colman equipment is ordered, they will, upon delivery, supervise the installation and accurately calibrate the controllers. In addition, training courses for mill mechanics are offered at Barber-Colman branch offices to impart "Know-How" and thus assure continued efficient operation of the equipment. Let your Barber-Colman representative show you how to obtain lower costs, greater production, and better products.

BARBER-COLMAN COMPANY
ROCKFORD • ILLINOIS

Write for Literature

BOSTON, MASSACHUSETTS • GREENVILLE, SOUTH CAROLINA • GREENSBORO, NORTH CAROLINA

84 Years of Yarn Dyeing Service

Package Dyeing

Skein Dyeing

Research and general laboratories

Since 1865, Globe Dye Works Company has been a leading commission dyer of yarns for every weaving and knitting purpose, giving efficient dyeing service to exacting customers locally and throughout the entire textile industry.

As the industry has grown, Globe has expanded its personnel and equipment, until today no plant anywhere has more to offer in quality, variety, and volume of yarn dyeing service.

•

Yarns we process include cotton, rayon, worsted, nylon, blend and novelty yarns.

•

We do package dyeing on tubes, skein and warp dyeing, warp mercerizing and sizing.

•

GLOBE DYE WORKS CO.

4500 Worth Street **Philadelphia 24, Pa.**

stick, leaving the water running. Sometimes closing springs break. Such troubles should be corrected immediately, for water wastage can be tremendous with constantly running drinking fountains. A stuck fountain usually runs at virtually full flow.

Another source of trouble at drinking fountains is poorly adjusted flow control. Abuse of the mechanism frequently results where stream flow is not kept normal. If the flow is not adequate, exasperated users will try to turn the valve handle beyond its normal stopping point, and some may succeed, damaging the mechanism. Some become angry and kick or hammer the handle or tamper with the bubbler.

If flow is too strong, funsters take delight in seeing how far beyond the bowl they can squirt water, with the resultant mess and floor-slip hazard.

Care of plumbing is not complicated or difficult. Any cleaning staff can be taught quickly the necessary procedures of regular maintenance. Most important is the establishment of a definite program to keep the sanitary-plumbing equipment working and looking its best at all times. If the program is carried out faithfully, the equipment will last and retain its beauty for the life of the building.

Safety

(*Continued from page 147*)

their energy should be consumed in tracing the direct cause of an injury. They knew that slippery floors, machines without belt guards, etc. were direct causes; but they also knew that other workers in the same department were exposed to the same hazards and did not have accidents. Something in the mind of the injured worker helped cause the accident. Therefore, psychological understanding of the various worker relationships was obviously needed.

SAFETY POINTERS. Some of the rules adopted by Talbot group discussion as basic principles of good worker-foreman relationship are reprinted here:

1. Get off right with new employee. Let him see that you're more interested in safety than speed of production.

2. Always use safety devices when showing a worker how to use his machine, even if you are so skilled that you hardly need them yourself.

3. Show your men that you respect the caution with which they work; and commend those who are most likely to show this caution, probably the one with a wife and children.

4. Mention previous accidents in a

SODA ASH • CAUSTIC SODA • CHLORINE • BICHROMATES • BICARBONATE OF SODA • SILICATE OF SODA

Chemicals you live by

LET'S TAKE A NEW ANGLE ON THE MATTER

It's a good time to fish around for better, more economical ways of doing things. Perhaps you are modernizing, or anticipating stiffer competition, or planning to expand. Your DIAMOND ALKALI salesman is trained in a great many aspects of chemicals—far beyond the techniques of selling them—and may be of assistance to you.

This is perhaps a side of your DIAMOND representative which you have not utilized. DIAMOND men often are able to save their customers money by applying an informed but outside point of view. They can be called upon to help with problems arising from the unloading, handling, storing and shipping of chemicals. They can also be depended upon to counsel in new manufacturing processes.

You can be assured of complete discretion for any confidence you place. That is part of their training, too.

DIAMOND ALKALI COMPANY • CLEVELAND 14, OHIO

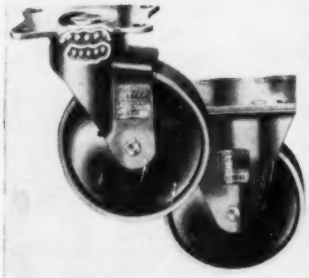
DIAMOND ALKALI CHEMICALS

Extra Value

ANY WAY YOU

MEASURE IT

DARNELL



for Every Type of Floor

CASTERS

FREE Manual

- Wearing parts carbonized and hardened
- *Patented* Double Ball-Bearing *Swivel*
- Maximum floor protection means savings
- Will increase efficiency of employees
- Made in any size for any type of use

DARNELL CORP. LTD. 60 WALKER ST., NEW YORK 13, N.Y.
LONG BEACH 4, CALIFORNIA 36 N. CLINTON CHICAGO 6, ILL.

way that lets everyone realize how bad they were for the workers, because of lessened earning capacity and disability.

5. Never praise increased production that is secured by taking foolhardy risks.

6. If a man has more than his share of minor accidents, find out what's on his mind before letting him go back to his machine.

7. Try to match intelligence to the job so that a worker won't be bored, have too much spare time in the plant, etc.

8. Encourage workers to figure out additional safety devices and commend any such discoveries when they are made.

9. Administer your reproaches or discipline privately if you know a worker to be sensitive.

10. Maintain a closer relationship with all workers, so that there are no serious emotional problems that you aren't aware of.

11. Try to arrange for the company to aid workers in outside difficulties such as financial burdens, nobody to take care of children, etc.

12. Encourage psychological and physical tests by the personnel department and company doctor and use them to place men in exactly the right jobs.

13. Practice scrupulous fairness in rotation of undesirable job operations and tasks.

14. Give each man a chance to be a safety inspector, so that at some time his job is to be conscious of safety.

15. Make sure your teaching methods are individual and effective.

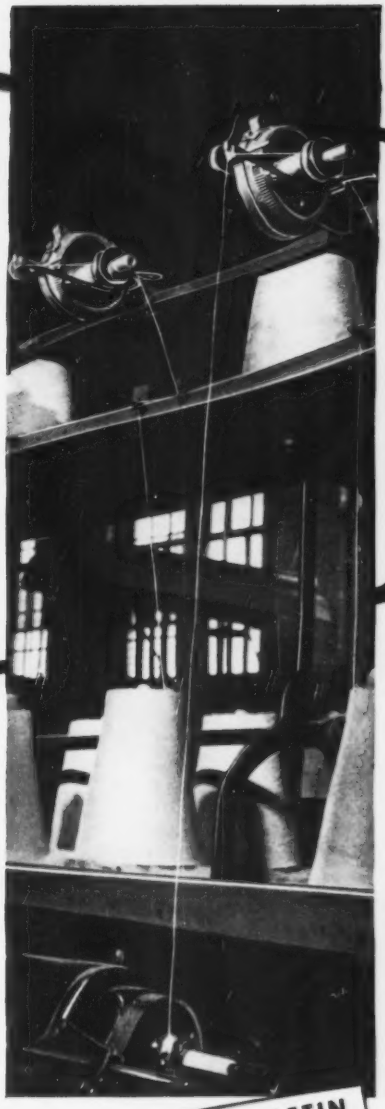
16. Keep testing workers, to see whether the safety lessons have soaked in, by having them demonstrate to the group.

ORGANIZED SAFETY. Talbot Mills bolstered its training and discussion program with organized safety practice. A rotating safety committee was formed to accompany the consultant-company engineer on tours of inspection each month. They highlighted housekeeping, unsafe acts and practices, unsafe conditions, and the corrective measures to apply. The inspectors carried cards that described every accident that had occurred in the mill since the last inspection, proceeded on the theory that an accident, no matter how light its cost, might disclose a potentially serious condition in the mill.

Regular monthly reports pinpointed accident causes, costs, unsafe conditions, and acts. Overseers in the course of their discussion with the inspector became acquainted with the dangers

For more information, write direct or use Reader Service post card.

"With the KIDDE TENSION COMPENSATORS we get far more uniform quills"



When this progressive silk mill installed *Kidde* Tension Compensators on 200 of its spindles, a definite improvement in quill uniformity was noted. And every textile man knows how important *that* is!

This is just one among many large-scale installations in which *Kidde* Tension Compensators have convincingly proved their value—in such operations as quill winding, warping, dye package winding, filling winding, plying. If the job calls for extremely accurate tensioning, it's a job for the *Kidde* Tension Compensator!

Just set this precision device to the tension you want, from 120 grams down to 6—to as low as 4 grams under suitable conditions. The Compensator *automatically* maintains the correct value—takes the variables out of yarn tensioning!

Walter Kidde & Company, Inc.
1091 Main Street, Belleville 9, N. J.
In Canada:
Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

Kidde

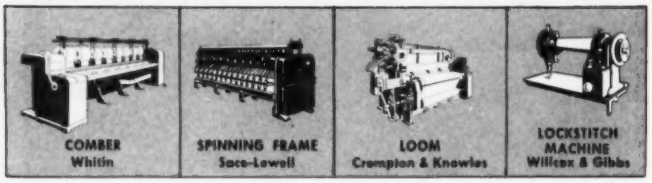
MAIL COUPON FOR BULLETIN

Walter Kidde & Company, Inc.
1091 Main Street
Belleville, N. J.

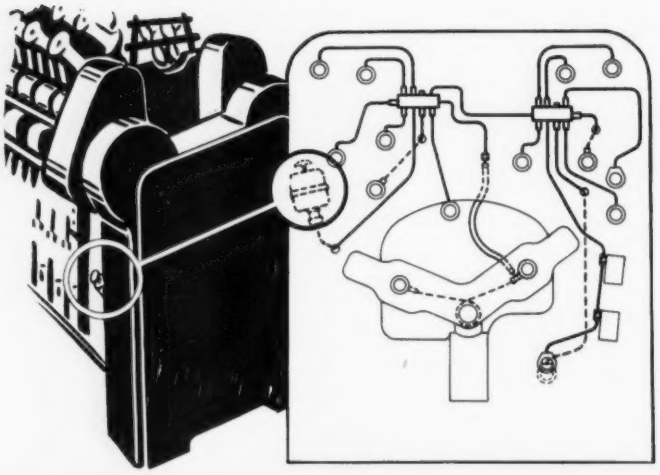
Gentlemen:
Please send me your bulletin, "Mill After Mill Approves *Kidde* Tension Compensator."

Name .....
Company .....
Address ..... Zone ..... State .....
City .....

LEADING MANUFACTURERS WHO BUILD IN THE BIJUR SYSTEM



continuous production



assured by the Bijur-lubricated machine

You don't have to shut down a Bijur-lubricated machine to oil it. The lubricator (circle) oils the machine during operation. In this way costly down-time for lubrication is converted into more time for production.

Maintenance time is further cut by the Bijur system of Meter-Unit control. This method reduces bearing wear by controlling oil film at each individual bearing automatically. To assure peak production over a long period, specify the Bijur system when ordering new machines. For further details, write for Bulletin 6A, "Metered Lubrication of Textile Machinery."

393

BIJUR
LUBRICATING CORPORATION
LONG ISLAND CITY 1, NEW YORK

of the "accident-prone" worker and learned how to cope with the attitudes that cause injuries.

As the Talbot Mills self-insurance plan developed, it became apparent that accident costs were controllable and that the plan furnished mutual benefits to both labor and management on a basis of genuine self-interest. In addition to lowering costs for management, labor gained from the lowered injury rate in a tangible way by enjoying full earning capacity and sound health and limbs.

The third year of Talbot Mills self-insurance accident control was culminated by winning the Commonwealth of Massachusetts award for the lowest accident frequency in the mill's class. Talbot President T. T. Clark is justly proud of the safety record and attributes the success of the plan to methods provided for improving safety attitudes among employees as well as those for mechanical improvements and control.

Printing Oils

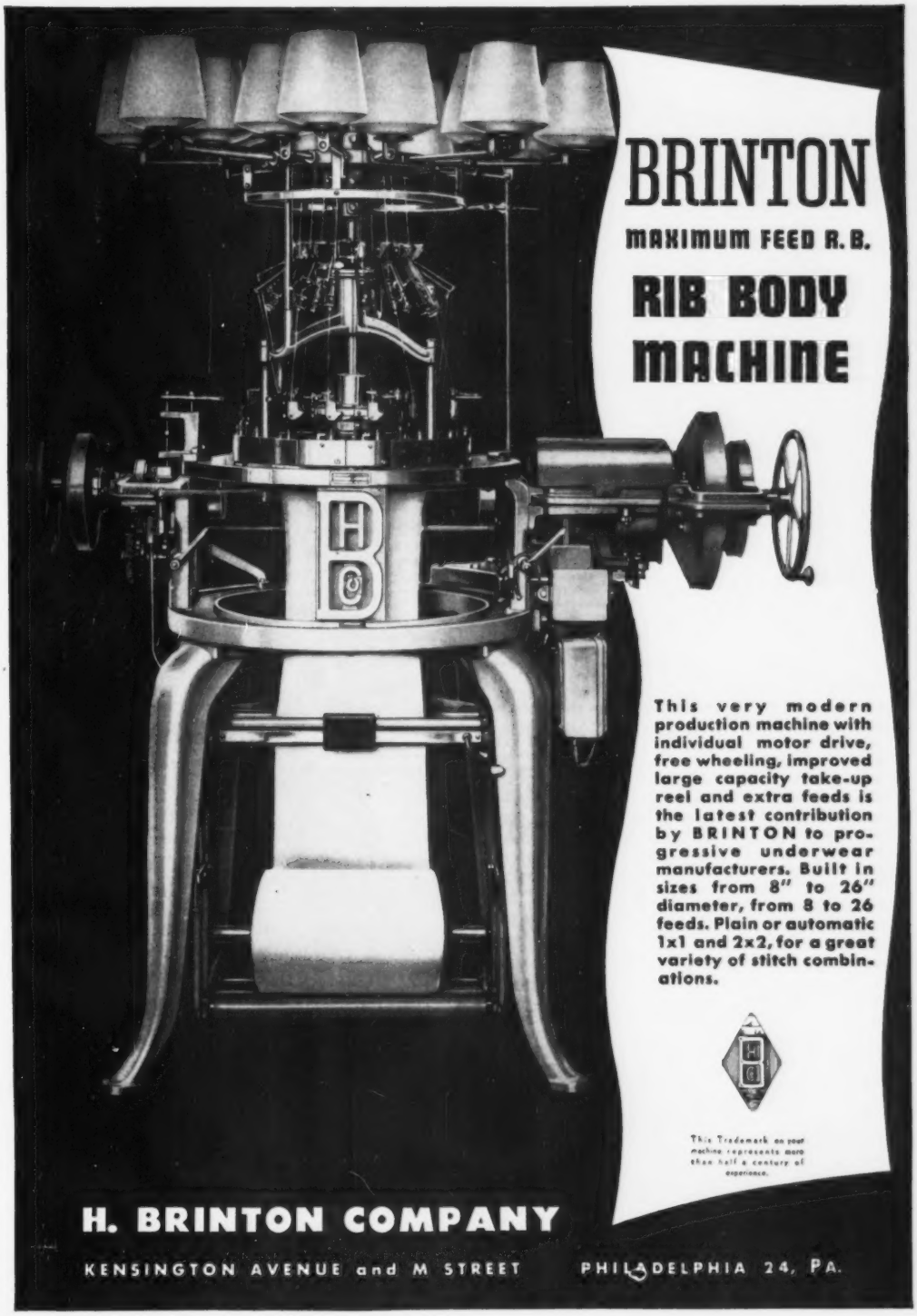
(*Continued from page 143*)

ucts and emulsions are most useful in this connection, as they do not easily resinify and form films. When oxidation is allowed to take place, a certain amount of the print-paste thickening will fix on the material and will be very difficult to remove.

Soap should not be present in emulsions. When soaps appear, resins may have harmful reactions, as already indicated. They also form insoluble soaps during subsequent processing, especially where metallic mordants have been used in the fixation of print pastes. If the presence of soap is suspected in an emulsion, its reaction with phenolphthalein will give a pink coloration, indicating the presence of alkali.

FROTHING COLORS. Sulphonated oils may tend to increse frothing of print pastes; although one instance has been given in which frothing has actually decreased, as in the case of olein with chrome-mordant dyestuff. It should be pointed out that no one oil or emulsion will help in every difficulty of this kind. The main fact to be kept in mind when print pastes froth during running is that the surface tension of the paste must be reduced as much as possible while the emollient characteristic of the paste is preserved. In a word, the print paste must have good "lubrication," "flow," and "cleaning" properties.

A frothy print paste may mean that flow is reduced, and that the action of the doctor-cleaning edge is interfered with by the retention of insoluble or separated ingredients of the print


BRINTON
MAXIMUM FEED R.B.
RIB BODY
MACHINE
This very modern production machine with individual motor drive, free wheeling, improved large capacity take-up reel and extra feeds is the latest contribution by BRINTON to progressive underwear manufacturers. Built in sizes from 8" to 26" diameter, from 8 to 26 feeds. Plain or automatic 1x1 and 2x2, for a great variety of stitch combinations.
This Trademark on your machine represents more than half a century of experience.
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Here is

PLASTOMATIC

...the First Successful All Plastic Tube Used in Warp Spinning Operations:

WHAT IS PLASTOMATIC?

Plastomatic is the result of two-years development by Plastomatic Corporation to answer the need for a *better type* tube for warp spinning operations in cotton and synthetic yarn mills where tube type spinning is used.

WHAT DOES IT DO?

Plastomatic overcomes three serious problems. First, it will not warp or crack, thus maintaining perfectly balanced spinning. Second, greatly prolonged life, does not chip or absorb moisture, will give you lasting service in original perfect condition. Third, eliminates all doffing difficulties.

WHO IS USING IT NOW?

Some of the large textile mills including Borden Mills, Inc.; Drayton Mills; Gaffney Mfg. Co.; Deering, Milliken Mills; and Union-Buffalo Mills, etc. . . . all reporting improved operations with Plastomatic.

WHAT ARE ITS FEATURES?

Built-in patented feature* simplifies doffing . . . skinner operation eliminated due to smooth hard dent and scratch free surface . . . no caps to cut fingers or snag thread . . . unaffected by moisture, dyes and acids in all conditioning operations . . . tubes always remain completely straight and warp free.

HOW DOES IT SAVE?

Increased production and lowered operating costs made possible by greater speed, less ends down, establishment of positive and greater work loads. With continuous balanced spinning, bearing wear is greatly reduced thus creating large savings in bearing replacements.

Sizes are currently available for most tapered tube type spindles

FURNISHED IN STANDARD SIZES FOR SACO-LOWELL & WHITIN TAPERED SPINDLES

Let us hear from you today

PLASTOMATIC CORPORATION
MALVERN, PA.

MANUFACTURERS OF SPECIAL BOBBINS AND TUBES SPECIALIZING IN HIGH IMPACT PLASTIC MATERIALS

*Pat. Applied For

paste. Moreover, a frothy print color contains a large amount of air; and an equal volume of such "color" cannot contain as much dyestuff as if frothing were absent. Volume for volume, much less dyestuff is conveyed to the fabric; and the shades are therefore weaker, in addition to the disadvantages already outlined. Pine oils with a high terpene-alcohol content have prevented frothing with some vat-dye print pastes as well as with chrome-mordant dyestuffs.

FINISHING. Oils of the foregoing types may act as softening, penetrant, and wetting agents in finishing processes. Softening processes in printgoods finishing often have to be used because of residues of thickening left in heavily printed materials. Sulphonated castor oil is frequently used for this purpose.

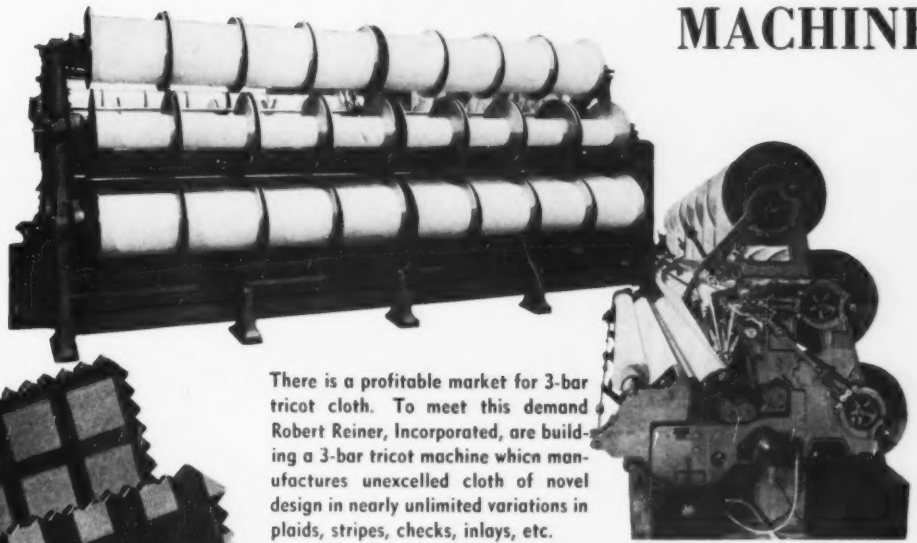
When clearing of scums is necessary, sodium hypochlorite should always be used in preference to calcium hypochlorite. If the latter is used, there is always danger of reaction with the calcium salts, or oleins, used in the softening processes. And it is possible that there may be formed insoluble soap deposits which may give rise to trouble at the final stages of finishing. This "clearing" treatment is only applicable when the dyestuffs are easily removed or discharged by hypochlorites without damage to the remainder of the colors in the printed pattern or in the cloth itself.

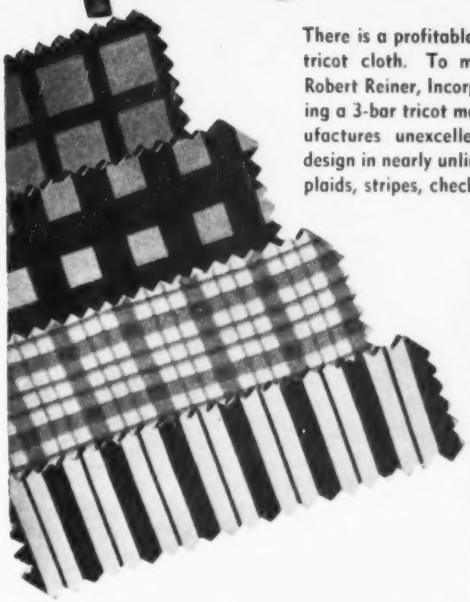
Highly sulphonated oils act as wetting agents when crease resisting is to be applied to increase the absorptive capacity of the print goods. It is well known that good crease resisting depends upon thorough penetration of the urea formaldehyde or other resinous mixtures that are applied prior to baking. With imperfect penetration of the resin, surface resins may form during baking, leading to harsh and brittle finishes.

USEFUL ACCESSORIES *for the Textile Mill*

A new plastic diaphragm for use in Hills-McCanna Saunders Patent Diaphragm valves has been developed by Hills-McCanna Co., 3025 North Western Ave., Chicago 18, Ill. The makers claim that the new material makes it possible to handle 66° Bé sulphuric acid without the leakage, dripping, or sticking problems generally encountered in valving this material. The introduction of this new diaphragm is said to open a completely new field in which valving problems have never before been satisfactorily settled. Valves with these new diaphragms will be

Here is the *Reiner* 3 BAR TRICOT MACHINE





There is a profitable market for 3-bar tricot cloth. To meet this demand Robert Reiner, Incorporated, are building a 3-bar tricot machine which manufactures unexcelled cloth of novel design in nearly unlimited variations in plaids, stripes, checks, inlays, etc.

This 3-bar tricot machine runs at 320 courses per minute and can be stepped up to 360 courses when used as a 2-bar machine. Gauges are 14, 24, 26, 28, 32. Automatic oil feed lines throughout.

Chain link or pattern wheel drive. The machine takes spools up to 21 inch flange diameter, or those of any conventional size.

This machine is already producing at various mills to the entire satisfaction of experienced knitters. Those interested in this profitable market are invited to write for details. Early deliveries are assured.

The Reiner Line includes:

Raschel Machines — Simplex Machines

and a full line of preparatory equipment such as creels and warpers for all requirements, warping spools, hydraulic beam lift wagons, stop motion equipment, and auxiliary items, giving the knitters a continuous line from start to finish, all available from one source.

FOUNDED IN 1903

ROBERT REINER INC.

550-564 GREGORY AVENUE
WEEHAWKEN, NEW JERSEY

10 MINUTES FROM TIMES SQUARE. Take Bus Nos. 61, 67, 167 from the Times Square Public Service Terminal at 260 West 42nd Street, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-2217.

WIPE OUT STATIC

from Your Production Picture with NOPCO* 1656-R

the antistatic oil that assures better WORSTED production

Today, when speeded-up processes in worsted yarn manufacture tend to promote static, you'll find Nopco 1656-R an ideal trouble killer.

Fibers treated with this specifically formulated oil remain static-free throughout carding, gilling, combing and drawing operations.

You'll avoid "wild" and broken ends, produce even-running, quality yarn with this new, antistatic lubricant.

Nopco 1656-R also ***eliminates*** oxidation, and ***reduces*** soap costs 75%. In fact, this remarkable new oil enables the worsted manufacturer to obtain exceptionally good results—comparable to those achieved by users of famous Nopco FUA oil for processing wool.

Yes, Nopco 1656-R means HIGH QUALITY WORSTED YARNS PRODUCED ECONOMICALLY . . . and in these competitive days what is of more importance to you?

Ask your Nopco representative for full details, or write today for complete information.

NOPCO
EVOLVED THRU RESEARCH

NOPCO CHEMICAL COMPANY

Formerly National Oil Products Company

HARRISON, NEW JERSEY

Branches: Boston • Chicago • Cedartown, Ga. Richmond, Calif.

* Reg. U. S. Pat. Off.

For more information, write direct or use Reader Service post card.

BETTER SEEING CONDITIONS! Application of Du Pont Color Conditioning in a sewing room at Great Barrington Mfg. Company, Great Barrington, Mass., provides workers with the correct degree of "brightness" within the working area, helps them see better, feel better, work better.

DU PONT COLOR CONDITIONING INCREASES EFFICIENCY!

SAFETY! Colors and symbols of the Du Pont Safety Color Code quickly identify first-aid and fire-protection equipment . . . "point up" hazardous areas . . . help prevent personal injury.

MORALE! Throughout your buildings . . . in rest rooms, washrooms, offices, corridors, etc., COLOR CONDITIONING imparts an agreeable, efficient atmosphere. Pleasant surroundings give workers a "lift" . . . pay off in better work.

SERVICE! A Du Pont maintenance painting expert is ready to discuss COLOR CONDITIONING with you. He will show you how this scientific painting plan can be applied to your buildings . . . without added cost.

NOW, at no increase over the cost of normal maintenance painting, you can have all of the benefits of scientific Du Pont Color Conditioning for your plant . . . better seeing conditions, increased quantity and quality of output, better employee morale, lowered accident rates!

Actually, in the long run, Color Conditioning costs *less* than the old-fashioned system of plant painting. For Color Conditioning utilizes light and color *correctly* to make maintenance painting pay extra dividends. No mere theory, Color Conditioning is being proven daily, in thousands of industrial plants, from textile mills to foundries, in old and new buildings.

Why not let a Du Pont paint salesman tell you the complete Color Conditioning story, and discuss the proper use of durable, pre-tested Color Conditioning Paints, Safety Color Code and Machinery Enamels throughout your building and on your equipment? Simply mail the coupon below.

DU PONT

BETTER THINGS FOR BETTER LIVING . . .
THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.)
Finishes Division, Dept. TI-910
Wilmington 98, Del.

Please send me, without obligation, your 32-page book, "Color Conditioning for Industry."

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*Title*_____

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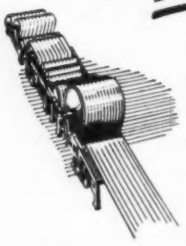
STALEY PRECISION-MADE STARCHES INSURE THESE THREE BENEFITS ...

1. *Uniform* SIZING
2. *Better* WEAVABILITY
3. *Improved* FINISH



Why not let Staley's highly skilled laboratory technicians recommend without extra cost to you, correct starches for ALL your sizing requirements? Staley's complete line of modified and unmodified Corn Starches—guarded for uniformity by rigid scientific controls—is acclaimed by leading textile manufacturers for consistent high quality and dependability. Let Staley work with you in eliminating forever your sizing problems, just as this company has cooperated with others for more than a quarter of a century. Write Today for more details!

Dependable Service from these Points—

ATLANTA, GA.
BOSTON, MASS.
CHICAGO, ILL.
COLUMBUS, GA.
DALLAS, TEXAS
DECATUR, ILL.
DURHAM, N. C.
GREENVILLE, S. C.
NEW YORK, N. Y.
PHILADELPHIA, PA.
SAN FRANCISCO, CAL.
SPARTANBURG, S. C.

Staley's CORN AND SOY BEAN PRODUCTS

STALEY "ECLIPSE" MILL* AND PEARL **STARCHES**

*THIN BOILING

A. E. STALEY MFG. CO., DECATUR, ILL., U.S.A.

OCTOBER • 1949

CARD CLOTHING NEWS and views

WRITTEN MONTHLY BY E. A. SNAPE, JR., PRESIDENT **Benjamin Booth Company** PHILA. PA.

STRIP-O-MATIC A Card Clothing For Plants Demanding The Highest Efficiency In Production!

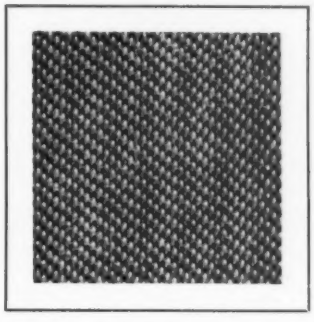
STRIP-O-MATIC card clothing packs a mighty wallop. So say the plants now using it. Their consensus: **STRIP-O-MATIC** lasts longer, requires only a minimum of stripping, and *cards better:*

What else could you possibly *want* in a Card Clothing?

No, you can't even find fault with installation. There are no costly methods to put on; just the usual type of apparatus and trained men accustomed to Fillet Clothing. . . . No change in Fancies as it operates with the Fancies you use regularly. . . . Nothing new for the help to learn. The strip crew will be available for other more productive work.

The many features of our new Card Clothing allow this saving of labor, as well as make possible better carding with virtually no stripping.

I should like to back up this statement by telling you *why* **STRIP-O-MATIC** performs so ably. The three major "parts" are a sturdy foundation,



allowing the wire to hold pitch; the setting and construction of the torpedo-shaped wires, which "comb" in such a way as to never damage the fibres; and the plastic face, which is oil and water-proof, permitting the use of emulsions containing oil or water, or both, to be used on the stock. Moreover, the Plastic Face is resilient and allows the wire to flex and return to normal position without damaging the wire or foundation.

IT'S READY FOR YOU!
NEW
8-PAGE
COLOR BOOKLET ON
STRIP-O-MATIC*

In this series of advertisements in Textile World I am endeavoring to keep you informed on what the industry thinks of **STRIP-O-MATIC,** as well as relate its features and savings. In today's mail came one of the strongest indorsements yet of the use of this Card Clothing *regarding definite increase in the strength of the yarn.* All of which makes us at Benjamin Booth Company feel that we really have a Card Clothing of definite value to you, because users have said so.

We cordially invite you to write today for a free copy of our new 8-page color booklet on **STRIP-O-MATIC** which fully outlines its construction features, advantages, and installation photos showing test runs. Your copy will be sent immediately.

Thanks,

E. A. Snape Jr.

President,
Benjamin Booth Company
Allegheny & Janney Sts.
Philadelphia, Pa.

* Pat. Applied For.

furnished in sizes from ½ in. through 4 in. in cast-iron, cast-steel, Durimet, or glass-lined bodies.

Improved "Slo-Speed" geared motors have been announced by Sterling Electric Motors, Inc., Los Angeles, Cal. This new-type geared motor is of "Klosd-Tite" construction for atmospheres containing non-explosives dusts, vapors, and injurious foreign materials. An external fan forces powerful cooling blasts of air over the steamlined case. The motor also includes such Sterling features as labyrinth seals, heavy-duty ball bearings lubricated for life, and the patented herringbone rotor. Sterling motors and gears are combined in a balanced design from power intake to drive shaft, permitting mounting in any position without modification.

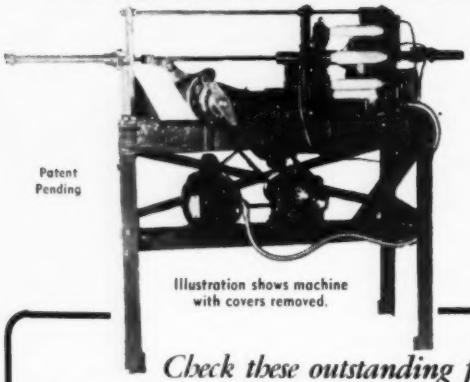
Elimination of high humidity is claimed for the new dehumidifier being made by Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa. One dehumidifier is *said to be capable of controlling moisture* in a room of 8,000-cu.ft. volume. The complete unit consists of condensing and evaporating coils with motor-driven fan and receptacle for condensate—all housed in a compact space 14 in. in diameter by 34 in. tall. In very humid conditions, the unit is designed to remove as much as 12 to 14 gal. of water per 24 hr. Compresser is driven by a 0.125-hp. motor; fan which draws air into unit has a 0.01-hp. motor.

Sets of laboratory weights, packaged complete with stainless-steel forceps in a new, clear plastic case, have been announced by Ohaus Scale Corp., 10 Hobson St., Newark 8, N. J. Each weight in the set is individually adjusted to well within Bureau of Standards Class "C" tolerances, the accuracy required for test weights used by Sealers of Weights and Measures. The weights from 1 to 50 grams are made of highly polished lacquered brass. Fractional gram weights are satin-finished aluminum. The denomination of each weight is clearly marked for easy identification.

Prevention of "acid splash" is claimed for the new safety carboy drainer now being manufactured by Wahlert Safety Products Corp., 25 Lafayette St., Brooklyn 1, N. Y. When used with the company's carboy tilter, the handling of acids is said to become a safe and simple process. Uninterrupted liquid flow is assured through an air vent which makes pumping or syphoning unnecessary. Every part is replaceable, and the soft-rubber neck fits different-sized carboys. Vent and spout are made of hard, durable, acid-proof rubber. Three sizes are available, the Junior for 5-gal. carboys, the Standard for 10- to 13-gal. carboys, and the Large for extra-sized carboy necks.

A treadle-type foot switch of small, lightweight, sensitive, and low-priced design has been announced by Simonds Machine Co., Southbridge, Mass. The switch has many industrial and commercial applications such as electrical mangles,

WARP BOBBINS STRIPPED AUTOMATICALLY *without damage* by the New "PRODUCTION ENGINEERS" Machine



Patent Pending

Illustration shows machine with covers removed.

Check these outstanding features

Strips all yarn from any shape warp bobbin without damage to bobbin.

Bobbin automatically controlled by machine in all operations.

Cuts finest yarn without cutting bobbin.

Compressed Air jets remove all yarn and cut ends.

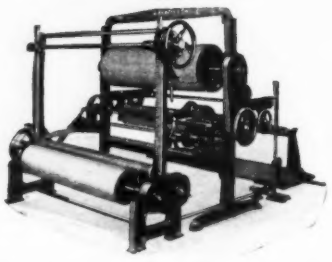
Compressed air blows out spindle hole.

Overload safety clutch prevents breakage.

Capacity 35 bobbins per minute—or 16,000 bobbins per 8 hr. day regardless of whether full, strip or tailings are put through machine.

PRODUCTION ENGINEERS CO.

306 Stuart St., Boston, Mass.



TRADE-MARKING MACHINE

For Cottons and Rayons

The Scholfield Trade-Marking Machine prints a trade-mark at regular intervals along the selvedge of the goods. Built in different widths.

Ask us more about it!

Curtis & Marble MACHINE COMPANY WORCESTER, MASSACHUSETTS

fastening machines, intercommunication systems, signaling devices, photographic studios, small work shops, wire recorders, etc. The small size and light weight of the switch are said to make it easy to position in any convenient place or position. The actuating mechanism is so sensitive that it is equally effective for operation by foot, finger, knee, or elbow.

An improved open-side pallet rack is being produced by Union Metal Mfg. Co., Canton, Ohio. The unit is said to combine the best features of both pallet and rack and to have several advantages over most other types of materials-handling equipment. The pallet-rack can be used to tier loads of odd shapes and sizes which could not be formerly safely handled and stored with pallets or racks. The pallet rack is also designed to provide extra protection for handling and tiering of easily broken materials by eliminating by the possibility of product damage. Open sides make the materials easily accessible, an additional advantage in storing or removing materials.

A new variable-speed control unit of 1 or 2 hp., 6-to-1 ratio, with fixed centers at any distance, has been announced by Speed Selector, Inc., 118 Noble Ct., Cleveland 13, Ohio. The complete assembly includes two variable-pitch sheaves and control. A spring-loaded sheave is mounted on the motor shaft while the control sheave is mounted on the driven shaft. A regulating mechanism consisting of a hand wheel and bracket, adjustable to any application, opens and closes the control sheave. The changes in pitch diameter cause the standard V-belt to actuate the spring-loaded motor sheave, thus giving stepless speed control over a 6-to-1 range. Remote control can be easily applied.

Textile Equipment News

(*Continued from page 168*)

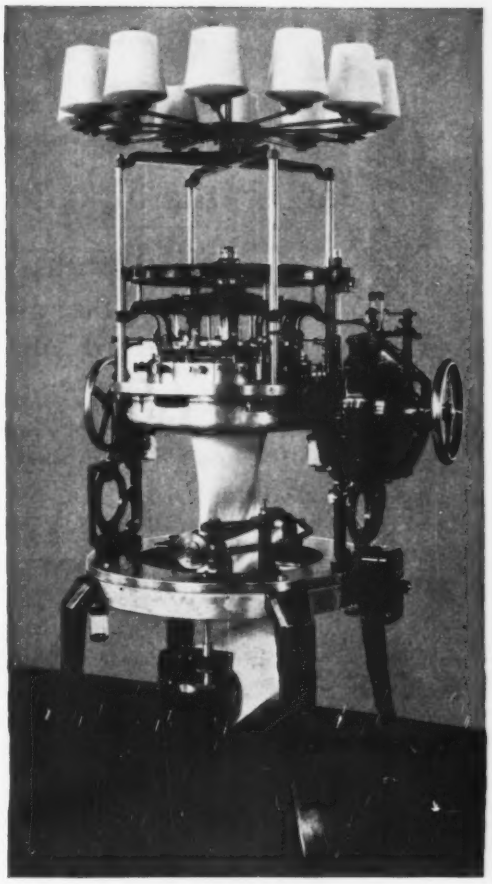
propeller equipped, the new mixer produces an annular rather than circular flow. Thus, all materials, including the heavier particles, are rapidly drawn into the propellers where they must pass through the shearing zone. There is practically no cavitation, no centrifugal effect, and the liquid level remains essentially constant, allowing the use of nearly filled containers, it is claimed.

Materials which with conventional single-impeller or bent-rod stirrers require two hours or more for effective dispersion, have been thoroughly mixed by the Brookfield counter-rotating mixer in less than 10 min., the company states.

The counter-rotating mixer allows relative speeds from approximately 200 to 12,000 rpm. and provides a continuous variable-speed control through a general Radio Variac which

IT'S

ENGINEERED



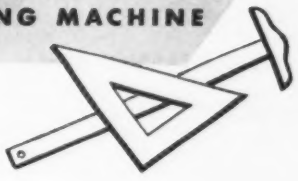
to do your very toughest knitting job PERFECTLY

Of course it can do your simplest operation too . . . it's so flexible our engineers can adapt it to every knitting product demand of your mill. Its beautiful workmanship is so perfect, it offers exceptional accuracy in garment sizes and practically unlimited style opportunities. Many operational features and advantages . . . such as the ability to change from an old cone to new cone without stopping the machine. Lots of others that we'd like to tell you about.

The NEW 1950

WILDMAN

KNITTING MACHINE



WILDMAN MFG. CO., Norristown, Pa.

 For more information, write direct or use Reader Service post card.

Superior Porcelain
for Textile Machinery

2,000 Items
A NEW Finish that gives
50% Increased Life

Standard or Special Designs
Porcelain, Enamel or Glass
for Every Textile Need

PAGE MADDEN CO., INC.
Mineola, N. Y.

You Couldn't Find An Easier, Quicker
Sudsing Soap or Flakes Than...

DRUMMOND

LEAVES FABRICS CLEAN . . . SOFTER . . . COLORFUL

As Free Sample Will Show You!

Both DRUMMOND Soap and Flakes have the advantage of high body and low alkali content . . . an advantage that instantly leaves fabrics clean with a downier feel, brighter color and whiter white.

We offer you a free sample to show you what we mean.

Easier—quicker-sudsing DRUMMOND—that's the answer to your cleaning problems.

Write today for your ample-size sample of DRUMMOND Soap—just ask for Flakes or Solid.

TEXTILE OILS AND SPECIALTIES

Standard Soap Co. of Camden

205 South 2nd St.
CAMDEN, N. J.

James A. Greer, Southern Manager
P. O. Box 306, Greenville, S. C.

is mounted, together with an On-Off switch, on the support-stand base.

The motors are completely inclosed for protection from corrosive fumes, and all immersible parts are of type-302 stainless steel, except a bottom guide bearing of leaded bronze. Four high-speed, precision, permanently greased ball bearings are used to provide trouble-free service; and a smooth-acting clamp is designed to allow quick, easy position adjustments.

The mixer is available for either 110 or 220 v., a.c. or d.c., and with shaft lengths and propeller designs as required.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-126.

Two-for-One Twister Designed for Tire Cord

A new two-for-one twister is said to reduce the tire-cord twisting operation to one step with savings in time, space, and cost. The machine is manufactured by a new textile-machinery manufacturer, Howe Machinery Co., Inc., 30 Gregory Ave., Passaic, N. J. The twister is also said to be adaptable to rayon, glass, nylon, and cotton.

The working model of the machine produces 1650-den. tire cord at 1.6 lb. per hr., and 2200-den. tire cord at 2.68 lb. per hr., the manufacturer states. Cord is produced on 10-lb. metal spools.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-133.

SELF-LUBRICATING hold-down hook for drafting rolls has simple, sturdy construction, is made of sintered bronze.

Spinning Roll Bearings Are Self-Lubricating

A new hold-down hook of porous, self-lubricating, sintered bronze for drafting rolls on Prince-Smith & Stells and Saco-Lowell spinning frames has been developed by Neveroil Bearing Co., Wakefield, Mass.

The special alloy is designed to give maximum service under the most severe operating conditions. Labora-

MEMO # 4 of a Series

(1) Looking Forward
(2) Tradition or Progress
(3) Reputation or Performance
(4) Facts or Claims
(5) Take it or Leave it
(6) A Challenge

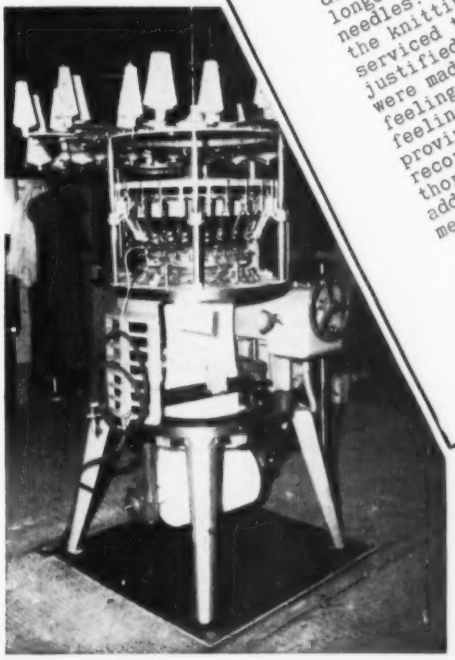
CABLE ADDRESS EDMOSCORP, NEW YORK

EDMOS PRODUCTS *Corporation*

13 CHRISTOPHER AVENUE BROOKLYN 12, NEW YORK DICKENS 2-0172-3

FACTS OR CLAIMS

''It's a fact'' you've read it and heard it hundreds of times, but is it or just a claim. That's the problem and you must be the judge. A few years ago when we built the first Edmos machines we claimed greater production, simpler construction, lower maintenance, longer life, easier operation and less breakage of needles. After these machines went into production in the knitting mills around the world, we watched them, serviced them, tuned them up. When claims were not justified by facts, we brought them back—improvements were made and are constantly being made for there is no feeling of complacency, no tradition, no stand pat feeling at Edmos. Type E.E.M. Edmos Machines are proving our earlier claims as fact based on their records in mills around the world. Mills that have thoroughly tested our sensational machine are ordering additional machines. A re-order is the finest compliment in the world—it's a fact!



Built in the following sizes
1x1 or 2x2—8 to 16 cut

12"—16 feeds	18"—27 feeds
13"—18 feeds	19"—28 feeds
14"—20 feeds	20"—30 feeds
15"—22 feeds	21"—31 feeds
16"—24 feeds	22"—33 feeds
17"—25 feeds	23"—34 feeds
	24"—36 feeds

ILLUSTRATED: Type EEM Edmos as shown at the 1949 Knitting Arts Exhibition

BANISH
THAT
BREAK-DOWN
BUG-A-BOO

with SIMPLIFIED PREVENTIVE
MAINTENANCE CONTROL RECORDS

To prolong the life and productivity of your plant and equipment, to save money on repairs and replacements, to avoid needless breakdowns and costly "downtime"... you need the positive control of maintenance activity that Kardex Visible Records provide.

With Kardex Visible Records in control, your maintenance crew makes *periodic inspections on schedule*. The result... high operating efficiency for your plant, delivery promises made and kept, manufacturing costs held within bounds.

Send for free descriptive folder (No. KD 449) today. Systems Division, 315 Fourth Ave., New York 10, N. Y.

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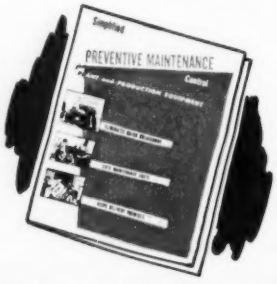
WRITE FOR FREE COPY



Remington Rand THE FIRST NAME IN BUSINESS SYSTEMS

Sterling
Ring Travelers

INVENTORY

Keeping inventories low? Then use Sterling Ring Travelers.

Travelers are inspected, packed and the boxes clearly marked as to contents, and dated the day they are shipped.

They are "Sterling" in quality, as well as in name, and deliveries are quick. Try some.

M. H. Cranford, Box 204, Chester, S. C.
H. B. Cabaniss, Box 198, Monroe, N. C.
D. R. Ivester, Box 882, Clarkesville, Ga.
J. S. Furtado, Box 803, Fall River, Mass.

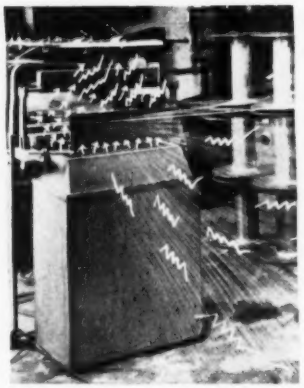
STERLING RING TRAVELER CO.
FALL RIVER, MASS.

tory tests indicate that the bearing will run for a year and a half without any further application of oil. It is, however, recommended that in actual operation it be lubricated with only a few drops of oil once a month, mainly for cleaning purposes, to remove any accumulation on bearing surface.

The following advantages are claimed for this bearing—lower price, no oil stain on yarn, less fly adhering to machine, less down time for cleaning, uniform low coefficient of friction, less shaft wear, and simple installation.

These same principles are said to extend to the many other self-lubricating bearings manufactured by the company for the textile field. One line of lower-cost bearings is made of northern rock maple, fully impregnated with best-quality lubricants The second type of bearing is made from powdered metal for porous metal self-lubricating bearings of many different alloys and densities. Bearings are also designed and developed to solve special problems.

To request further information, please use the card on page C of the Reader Service dept.; refer to T-129.



MOISTURE LOST BY YARN because of heat of friction can be replaced in warping by this new conditioner.

Warp Conditioner Reduces Static Problem

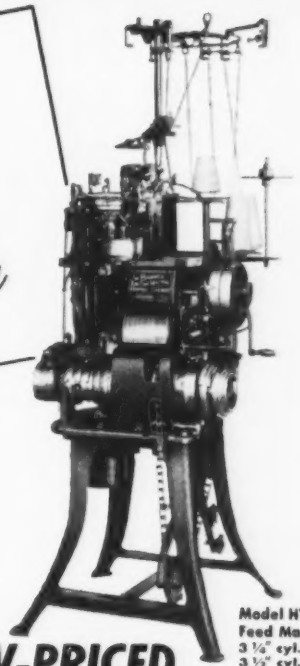
A new warp conditioner designed to reduce static and moisture-regain problems in warping has been developed by Air-Perme-Ator Co., 300 Preakness Ave., Paterson, N. J.

The conditioner, placed beneath the yarns and under the yarn board, releases highly saturated air upward. The saturated air is said to eliminate static electricity and helps yarn regain its moisture content. According to the manufacturer, tests revealed that

ANNOUNCING THE

BANNER

Vari Pattern



Model HTF-49, 20-Step, Double Feed Machine Available in
3 ½" cyl., 18, 24, 36 & 48 ga.
3 ½" cyl., 18, 24, 36 & 48 ga.
3 ¾" cyl., 18, 24, 36 & 48 ga.

THE FIRST, NEW, LOW-PRICED HOSIERY KNITTING MACHINE IN TEN YEARS!

A NEW Machine for NEW Business—NEW Profits!

The "Vari-Pattern" is a timely Hemphill development, designed to stimulate profitable business in the production of fancy hose with elastic tops — at reasonable cost.

It's a low-priced, high performer with an amazing versatility and simplicity of operation. The "Vari-Pattern" offers a tremendous variety in the amount of patterns and colors it can run in all gauges and cylinder diameters from any type yarn. A high production rate of up to 7 dozens in 8 hours assures profitable volume. And yet, its low cost is in direct contrast to its highly versatile performance.

Patterns are controlled by disks which can be changed with surprising quickness and ease at very little cost. This feature results in a greatly enlarged scope for pattern design without fear of the ordinarily high change-over costs. The entire machine is so simple to operate that one operator can efficiently take care of a large battery.

Hemphill's "Vari-Pattern" is your answer to where to find *new volume — new business — new profits!* As always, Hemphill's Fabric Research Department stands ready to help you develop for your own operation the full extent of this new machine.

Find out exactly how the Hemphill Banner "Vari-Pattern" can work for you . . . find out from a Hemphill sales engineer. Ask to have one call soon! He'll give you full details on the low, low price and high production rate together with full descriptive data and delivery date. Address Dept. — today!

HEMPHILL BANNER MACHINES

Shaping Hosiery's Footprints All Over The World!

HEMPHILL COMPANY

PAWTUCKET • RHODE ISLAND • U. S. A.

Agents In Principal Cities Throughout The World

Makers of Banner Hosiery Machines

OFFICES: EMPIRE STATE BLDG., NEW YORK 1, N. Y. ; SECURITY BANK BLDG., HIGH POINT, N. C. EXPORT OFFICE: 25 BEAVER ST., NEW YORK 4, N. Y.

Automatic

Singeing Machines

- FOR RAYONS, COTTONS,
- RAYON-COTTON MIXTURES,
- RAYON-WOOL MIXTURES,
- AND WORSTEDS.

This versatile machine does a superior job on all fabrics listed above. Singes closely and uniformly in one pass, at speeds up to 300 yards per minute. Can be used in tandem with bleaching range, caustic boil-out, or mercerizer. Uses oil, natural or artificial gas for fuel.

EXCLUSIVE BURNER DESIGN

I.H.E. high velocity flame retention-type Burner of exclusive, patented design give a close, even finish on all types of fabrics. High velocity of the flame provides singeing into the interstices of the fabric. Burners for your particular fabric can be especially designed.

INDUSTRIAL HEAT ENGINEERING CO.
Textile Drying, Curing and Singeing Equipment
121 CLEVELAND ST. • GREENVILLE, S.C.

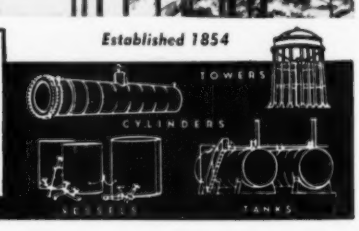
For *Economical* Maintenance

COLE ELEVATED TANKS

• Design plays an important part in tank maintenance. Experienced engineers design Cole tanks for easy access and minimum maintenance costs, as well as for permanence, safety, and dependability. Send us your inquiries for tanks 5,000 to 2,000,000 gallons—stating capacity, height to bottom, and location. Write for latest Cole catalog—"Tank Talk."

Established 1854

R.D. COLE MANUFACTURING CO.
NEWNAN, GA.

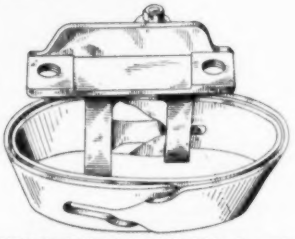


the traveling yarn absorbs heat of friction and loses its moisture.

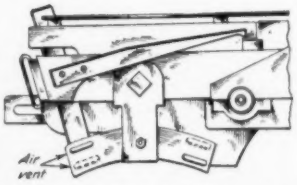
The conditioning unit is compact and inexpensive, the manufacturer states. Only water and electricity are needed for operation. Units are available to fit any size warper.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-134.

New-Design Check Straps Offered



AN ENDLESS STRAP, the Kwick-Lock, can be installed in less than two min. without taking down the end of the loom, according to the manufacturer, Slip-Not Belting Corp., Kingsport, Tenn. Straps are engineered to individual-mill stroke requirements.



A VENTILATED STRAP has slots in each end to dissipate heat and prolong strap life. This strap is said to be especially useful on high-speed looms.

To request further information on both straps, please use the card on page C of the Reader-Service dept.; refer to T-122.

Plastic Tubes Easy To Doff, Will Not Unbalance

Plastic spinning tubes said to overcome the two most serious problems of tube spinning, difficulty in doffing and unbalanced spinning caused by cracking, etc., have been developed by Plastomatic Corp., Malvern, Pa.

The new tubes have a special built-in patented feature said to simplify doffing greatly, regardless of how hard an operator drops the tube on the spindle. Skinner operations are eliminated due to the smooth, hard, dent- and scratch-free surface. The tubes have no caps to cut fingers or snag thread—the smooth, all-plastic surface eliminates this hazard, the company states.

The tubes are also said to be com-

men like wool socks not wool boots!

TSK! TSK! TSK!

POOR FELLOW! His practically-new wool socks are "fit" for a child! Plenty of wear in them yet—but the size is gone... the texture is gone ...the comfort is gone. Yes, plenty of wear but no wearability!

WOOL SOCKS start "going" long before they start wearing. Matted, shrunken wool socks are like wool boots—and just about as useful!

Almost every time he takes a pair of freshly-washed wool socks from his drawer, he swears that he'll never, never wear wool socks again! Too expensive. Can't afford the luxury of seeing his socks wash-out instead of wear-out.

But there's a remedy to this problem. More and more wool socks customers are learning every day, that SCHOLLERIZING adds *miles of useful life* to wool socks—USEFUL LIFE for the life of the fabric! Schollerizing protects against shrinkage, matting and felting. It prohibits the slightest change in texture, resiliency, elasticity or "hand" of the original wool. All of the wonderful inherent qualities and characteristics of the wool are preserved for as long as the fabric lasts—regardless of how many times it is washed or rubbed or tubbed!

ALERT manufacturers are investigating the Scholler Process* of Wool Shrinkage Control. The simplicity of application, the stability of the process urges your immediate interest. Write today for all the facts.

*U. S. & Foreign Patents Pending

Schollerized
WASHABLE WOOL
SAFE TO TUB • SAFE TO RUB

Visit booth #39 at the AATCC Convention, Atlantic City October 13th-15th.

Write Today For Full Details On The Amazing Scholler Wool Shrinkage-Control Process applied to YOUR product!

SCHOLLER BROTHERS, INC.

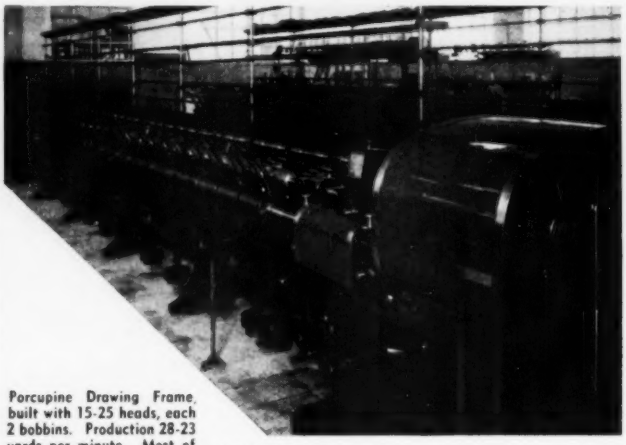
Manufacturers of Scouring, Dyeing and Finishing Materials

COLLINS at WESTMORELAND, PHILADELPHIA 34, PA.

IN CANADA: SCHOLLER BROTHERS, LTD., ST. CATHARINES, ONTARIO

SERVING THE TEXTILE INDUSTRY FOR MORE THAN FORTY YEARS

WORSTED PREPARING • SPINNING & TWISTING MACHINES



Porcupine Drawing Frame, built with 15-25 heads, each 2 bobbins. Production 28-23 yards per minute. Most of the parts are interchangeable with those of the gill box.

O.M.C.S.A. builds the following worsted machinery:

Mixing Machines—Intersectings —Gill Boxes—Porcupine

Drawing Frames — Spinning Frames—Twisters

Construction is simple but sturdy. Ball bearings. Superior in production and quality.

OMCSA **Officine Meccaniche Cigardi Soc. Az., Milano, Italy**

Exclusive Representative for U. S. A.

Rostan Machinery & Equipment Co., 75 West St., New York 6, N. Y.

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Today's most efficient Automatic Weft Winder.

For Particulars write to

KOVO Ltd., Praha 11, Czechoslovakia

pletely resistant to dyes and acids, and to be unaffected by the severest conditioning operations.

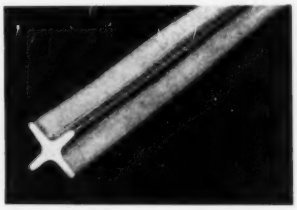
Humidified atmosphere in modern mill operation has no effect on plastic tubes, it is claimed; and tubes will not split, dry out, warp, or otherwise bend out of shape.

Because the tubes remain always completely straight and warp-free, bearing failure and ends down are greatly reduced. Noise is reduced because of the balanced spinning. Tubes are always in perfect condition, and never in "half-good" condition.

Other advantages claimed to result from use of the tubes are greater speeds, positive and increased work loads, greater output of yarn, better quality yarn, lower maintenance cost, lower rejects and seconds, lower operating costs, and better spooling as well as spinning conditions.

Sizes are available for standard spindles.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-123.



***RAPID FLOW OF DYE** and four-point support of dye package are advantages claimed for this tube-replacing spindle.*

Dye-Tube Spindle Eliminates Dye Trapping

A drawn stainless-steel shape to replace fabricated dye-tube spindle shafts, has been developed by Armco Steel Corp., Middletown, Ohio. This special shape is said not only to simplify manufacture of spindles, but also to insure utmost corrosion resistance.

With the drawn stainless-steel shape, the only operation required to produce a spindle shaft is cutting the shape to proper length. This operation replaces forming the shaft body by machining or by welding several sections together. Elimination of welding is especially advantageous, since warping of welded shafts sometimes requires a straightening operation.

Because the smooth, continuous surfaces of the drawn spindle shaft permit complete draining, dye can-

How efficient is your wetting agent?

This comparative test, made quickly in your office, will tell you!

Textile chemists are familiar with the canvas disc test which gives a true comparative picture of the speed of wetting agents.

To make such a comparison in your office, and to bring you the facts about our new SURFAX series, each Houghton Man in textile areas is equipped with a test kit as pictured above.

Ask him to demonstrate it to you, using your mill water, and checking Surfax 1288 against any other wetting agent you may have used. We'll rest our case on the results. To sum it up, you'll find you can use a lower concentration of Surfax (which means lower cost) and get faster wetting.

That's why we say Surfax 1288 is a great money value. With it you can reduce wet processing costs and speed up your operations.

And while you are discussing surface active agents, ask the Houghton Man also about the best type of CERFAK detergents for your needs. Here also Houghton excels, as a result of a seven-year development program which has brought to industry a series of synthetic detergents, in flake or liquid form, that can't be beat for scouring operations.

To see this demonstration now, write E. F. Houghton & Co., 303 W. Lehigh Ave., Phila. 33 or 825 W. Morehead St., Charlotte 6.

For the best money value . . . use

HOUGHTON'S SURFACE ACTIVE AGENTS

 For more information, write direct or use Reader Service post card.

NOW TEXTILE FINISHES AND STARCH SIZINGS

CAN BE MADE WITH

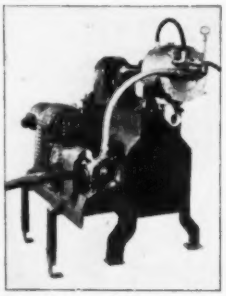
improved quality and texture

WITH THE

TRI-HOMO

triple homogenization

HOMOGENIZER

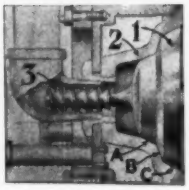


Thorough emulsification of starch sizing used in slashing. Less time required for preparation, lower temperatures, less material used, controlled penetration, less flaking, no dumping of batches.

Equally as efficient for pigments, dyestuffs, starches, resins, etc., used in finishing plants.

Only the Tri-Homo gives *triple dispersion* simulating the action of three separate grindings—all in one operation.

Write O. B. Graichen, Textile Division, 50 Borden Street, Providence, R. I.



Cross Sectional view showing triple dispersion at A-B & C.

● Send for illustrated folder, "Triple Dispersion in One Operation."

TRI-HOMO Corporation
SALEM MASSACHUSETTS

WILTEX Inc.

Aluminum Cloth Rolls

Rustproof Lightweight

NO SLOT NEEDED WITH THE AMAZING WILGRIP NON-SLIP FINISH

Now In Standard Use in Many Mills

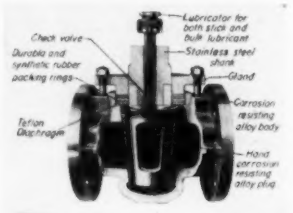
1340 E. 222nd St.
Euclid 17, Ohio

Quality

not become entrapped to corrode the metal and stain the yarn.

The spindle is available in Type-316 Armco stainless steel for use in sulphuric-acid dye solutions, as well as in other grades of stainless for use in less corrosive dyes.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-125.



***MEDIUM PRESSURES** can be safely handled by this new valve.*

New Plug Valve Is Corrosion-Resistant

A new Durco valve embodying the general design principles of the Durco top-lubricated plug valve, but with many new features, has been developed, tested, and is now available in sizes 1 through 3 in. for immediate shipment from Duriron Co, 17 E. 42nd St., New York 17, N. Y.

The new features of the Durco Type-A valve are:

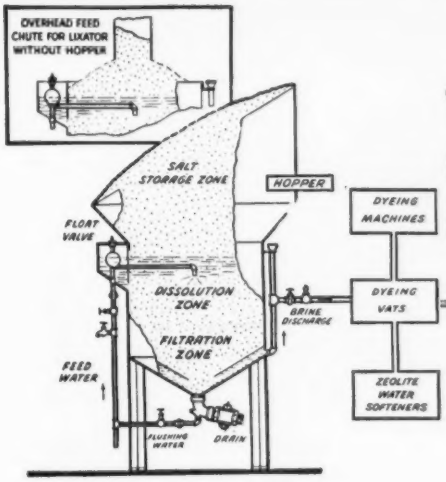
1. A composite plug made of a hard corrosion-resisting alloy, such as Duriron or Durichlor. The shank is made of stainless steel permanently bonded into the plug. The hard plug with an unbreakable plug shank is said to give positive mechanical operation.

2. The body and gland are made and regularly stocked in Durimet 20. This alloy is designed to provide ample strength and excellent general corrosion resistance. Other alloys are also available on special order for special corrosive applications.

3. The packing for the stuffing box consists of a combination of corrosion-resistant, hard, and resilent packing rings, and a Teflon anti-friction packing seal. This combination is designed to provide sufficient resiliency to permit the plug to be freed easily by lubrication; and sufficient firmness to maintain proper plug position, ease in turning under heavy gland pressure, and freedom from stuffing-box leakage under the medium line pressures for which the valve is recommended.

These features are said to enable the Durco Type-A plug valve to handle almost every type of corrosive, at a very reasonable cost, and free from operating hazards under medium pres-

The LIXATE pipe line to efficient brine distribution



HOW THE LIXATOR WORKS

In the dissolution zone—Flowing through a bed of Sterling Rock Salt which is continuously replenished by gravity feed, water dissolves salt to form 100% saturated brine. In the filtration zone—through the use of the self-filtration principle originated by International, the saturated brine is thoroughly filtered through a bed of undissolved rock salt. The rock salt itself filters the brine. Nothing else is needed.

THE LIXATOR *automatically* provides 100% saturated crystal-clear, self-filtered brine that can be piped, by gravity or pump, anywhere . . . at any distance . . . it is needed in your plant.

JUST TURN A VALVE for Lixate Brine that meets the most exacting standards for chemical and bacterial purity . . . that can be diluted volumetrically to any desired strength.

THE LIXATE PROCESS for Making Brine cuts production costs as high as 20% . . . by cutting labor, time and waste in making brine. No hauling, measuring, stirring . . . YET ALWAYS a continuous supply of *accurately measured* brine.

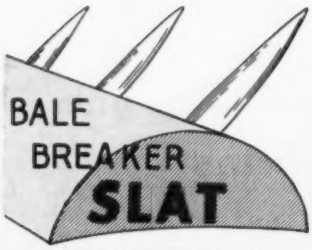
Consult our Technical Service Department on your use of salt and brine. The experienced men on this staff will advise you on the proper location for Lixator and salt storage, pumping arrangements, types of pumps, meters, and valves. They will fit the *money-saving* Lixator into your plant operations. Write today!

NOW AVAILABLE

The New Stainless Steel
STERLING MODEL LIXATOR
For "Lifetime" Use
For Greater Economy
For Added Cleanliness

The **LIXATE** *Process*
REG U S PAT OFF
for making brine
INTERNATIONAL SALT COMPANY, INC.
Scranton, Pa.

 For more information, write direct or use Reader Service post card.



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all you want

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ON PLAIN SLATS

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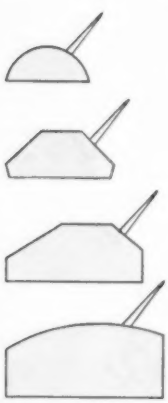
PINNED SLATS



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AND
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AND
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ANY TYPE
PINS

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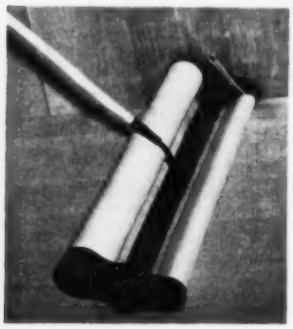
HIGH CARBON
STAINLESS
STEEL OR
BRASS

1000
OVER OUR
SPECIALTY

WILLIAM CRABB & CO.
301 — 3rd Ave.
Newark, N. J.

sures and relatively low maintenance.

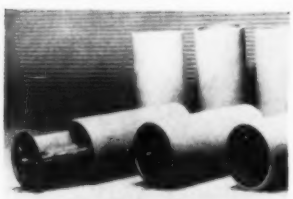
To request further information, please use the card on page C of the Reader-Service dept.; refer to T-131.



Dust Picked Up By Cotton Cloth

DUST MOP, called the Lino-Duster, with 42-in. lambswool-lined crosshead combined with handle and two wood rollers, is being made by Plastic Products, Ottawa, Ohio. One roller dispenses clean non-woven cotton absorbent cloth; the other rolls it up after rolling. Cloth is discarded after soiling. Two models are available. In one, cloth is advanced by hand; in the other, by a ratchet device.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-118.



GROOVE INSIDE PLASTIC TUBES is engaged by spring-backed ball on aluminum arbor when used on U. S. Textile Machine Co. twister.

Plastic Tubes Made to Withstand Crush of Nylon

An inexpensive but successful answer to the tremendous crushing strength of nylon yarn is said to be the headless package tube developed by Synthane Corp., Oaks, Pa.

The tubes are made of material developed especially to provide the abnormal crushing strength which this application demands. They are readily adapted to arbors on U. S. Textile Machine Co. twisters or to arbors which have catches of other types, and are furnished in diameters to fit arbors of various sizes. Wall thickness in all cases is 1/2 in.

Outer surfaces are rough-sanded to

The Beau Brummel of the Burlaps

ANGUS

Utmost care is taken to obtain only the choicest jute fiber for Angus burlap. It is then processed to rigid specifications to assure the extra strength and finer appearance for which Angus is famous.

BEMIS TITE-FIT BURLAP TUBING saves time and money for those who package odd-shaped and bulky products.

WORLD'S LARGEST IMPORTER OF BURLAP

Bemis

General Offices—St. Louis
Also Offices and Plants in Other Principal Cities

Will Your Cards *Run* to These Settings?

Feed Plate to Lickerin	— .010"
Mote Knives to Lickerin	
Top	— .022"
Bottom	— .017"
Screen to Lickerin	— .029"
Lickerin to Cylinder	— .007"
Flats to Cylinder	— .010"
Doffer to Cylinder	— .007"
Doffer Comb to Doffer	— .022"

SETTING a stationary card to these, or to your own standards, is one thing . . . **RUNNING** a card with these settings is something else.

- *Lickerins and cylinders cannot run true in worn bearings.*
- *Close settings, which mean good work, cannot be maintained with worn bearings.*
- *Cylinders cannot be properly ground when running in worn bearings.*
- *Close settings cannot be gauged at lickerin screens caked with grease and lint.*
- *Chattering combs cannot run closely and smoothly to the doffer.*

Southern States Ball and Roller Bearing Units on your cards make "Running to Gauge" possible — because the **SKF** bearings provide rigidity resulting in settings remaining the same whether the card is running or stationary.

Southern States Ball and Roller Bearing Units mean: an end to oil problems . . . oil-soaked clothing . . . caked screens . . . an end to dirty flats . . . excessive wear . . . shorter grinding time . . . simplified lubrication.

Install Southern States units at

LICKERIN • CYLINDER • COMB BOX
COMB STOCK OFF END

Southern States Equipment Corp.

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Largest Manufacturer of Cast-Tooth and Cut-Tooth Gears in the South

unique

BUSINESS GIFT

gives fabric counts

accurately, directly, without eyestrain

A BOX OF CIGARS is soon smoked! A watch costs far more and is looked at less often! But the precision-engineered Micro-Line Counter is a gift of lasting value . . . one that textile buyers and executives will use and carry with them day in, day out for years.

HERE'S WHY! The Micro-Line Counter is a scientific instrument that gives **accurate, instantaneous** fabric counts—from 40 to 150 per inch—of plain-woven goods such as cottons, sheetings, percales, rayons, nylons, linens, silks and tropical worsteds. It will also give the pick on most twill or satin weaves as well as the wales and courses on tricots and plain knits.

FREE, 4-page folder shows how intense, lens-sharpened moire patterns point to the exact count. Far superior to the slow, old-fashioned method, the Micro-Line Counter **does away with the tedious work of counting individual threads . . . saves time . . . eliminates the torture of eyestrain . . . prevents errors in count.** Your company name, personalized imprint, trade mark, slogan or message can be engraved or heat-stamped on the opposite side of the Micro-Line Counter or on the fine-grained black leather case.

Manufactured by

MICRO-LITE COMPANY, INC.
44 West 18 Street, New York 11, N.Y.

Mail coupon now for free folder and prices

Micro-Lite Company, Inc. Dept. C-5
44 West 18 Street, New York 11, N.Y.

Gentlemen: Without obligation, please send me free illustrated folder giving full information and prices on the Micro-Line Counter.

NAME_____

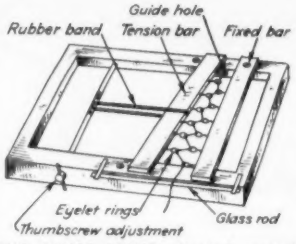
COMPANY_____

ADDRESS_____

provide the most effective grip for the yarn as the package is started, and ends are color-coded with paint to help the user identify various yarns instantly.

An additional feature of the headless type of tube is that it offers no impediment to thorough penetration when the package is steamed to set the twist. Light weight also reduces shipping cost.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-124.



THIS SIMPLE DEVICE effectively controls snarling of crepe yarns.

Tension Permits Unwinding Crepe from Packages

Difficulties in winding crepe yarns have been overcome, it is claimed, by the introduction of a new tensioning device which makes it possible to wind from large stationary packages. The device is the product of Thomas Grimshaw, Little Queen St., Colne, Lancashire, England.

Complete satisfaction in overend unwinding of crepe is claimed to be afforded by the new yarn-tensioning device which the makers state eliminates the possibility of snarls.

The tension is extremely simple in design, and can be fitted to any pirn winder either above or below the winding-on spindle. The device is made of wood and consists of a number of units, one for each spindle, each of which has a tensioning "gate" made up of two rows of eyelet rings.

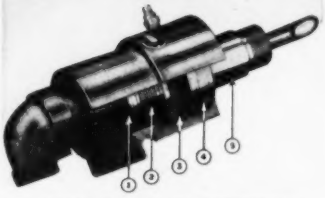
Yarn from the supply package passes through a guide hole and eyelet rings. If the device is fitted above the winding-on-spindle, it then goes over a glass rod to the winding-on-package. The glass rod is not required when the supply package is situated below the final package.

The device can be threaded in one simple action by pushing the movable tension bar towards the fixed bar of the gate arrangement and passing a reed hook through all the eyelet rings and the guide hole.

Tension on the yarn can be increased by moving the adjustable bar

WHERE *Good Connections* COUNT!

ROTARY UNIONS



1—SILVER BRAZED CONSTRUCTION
2—BELLOWS OF HEAVY MONEL
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4—BALL BEARING RADIAL THRUST
5—SHAFT OF SPECIAL STEEL

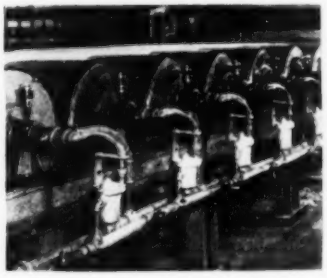
The most efficient and economical connection to revolving shafts or drums, for heating or cooling purposes.

Available from Stock in Pipe Sizes from ½" to 3" Plain & Syphon Types

Standard ALL-PURPOSE ROTARY UNIONS for such applications as Steam up to 150 P.S.I. Hot Oil to 550 F, Coolants, Air, Gases, Water, Brine, Vacuum, Alternate Mixtures, Speeds up to 1000 R.P.M. and others.

FOR HIGHER SPEEDS, PRESSURE TEMPERATURE AND DOWTHERM.

Write for Recommendations or Special Designs.



HERE IS WHY MACHINERY MFRS and TEXTILE MILLS

are replacing stuffing boxes and packing joints with ROTARY UNIONS. This photo shows a battery of ROTARY UNIONS installed on a Can Dryer. Notice the neat appearance, the absence of complicated piping and brackets. ROTARY UNIONS are favored by Engineers and Maintenance Men because of their dependability, low friction drag, easy installation, economy and long trouble-free operation.

WRITE FOR CATALOGUE explaining advantages of using ROTARY UNIONS in your plant.

Agents in Principal Cities and Canada

PERFECTING SERVICE COMPANY
6140 Cottage Grove Ave., Chicago, Ill.

"Don't send a boy to do a man's work"

There's a Powell Valve* that's just *right* for every known FLOW CONTROL SERVICE

Most valve failures are the result of misapplication . . . installing valves that aren't of the right design or sturdy enough to do the job for which they are selected. In other words, it's like "sending a boy to do a man's work."

On the other hand, it's a waste of money to specify costly valves for services where less expensive ones may be used. This amounts to putting a man on a job that a boy can do.

To avoid misapplication: (1) standardize on Powell Valves; (2) consult Powell Engineers as to which valves are specifically adapted to each and everyone of your individual flow control requirements.

Powell makes such a *complete* Line* that there is a Powell Valve *exactly* suited to every existing service, from the simplest to the most specialized or exacting. Ask your nearest Distributor—or write direct.

Fig. 560—200-pound Bronze Regrinding Horizontal Swing Check Valve with screwed ends, screwed-on cap and regrindable, renewable bronze disc.

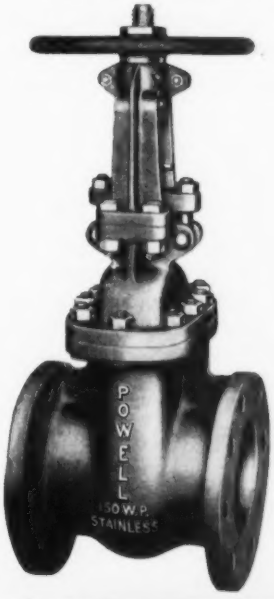


Fig. 2453-G—Large 150-pound Stainless Steel Gate Valve. Bolted flanged yoke-bonnet, outside screw rising stem and tapered solid wedge. Made in sizes 5" to 30", inclusive.

Fig. 500 — 125-pound Bronze Gate Valve with screwed ends, screwed-in bonnet, inside screw rising stem and tapered wedge; solid in sizes ¼" to ¾"; double in sizes 1" to 3".

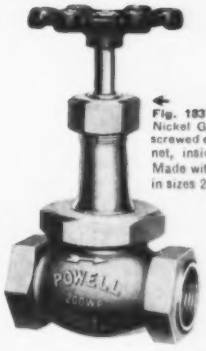


Fig. 1837 — 200-pound Nickel Globe Valve with screwed ends, union bonnet, inside screw stem. Made with bolted bonnet in sizes 2½" and 3".

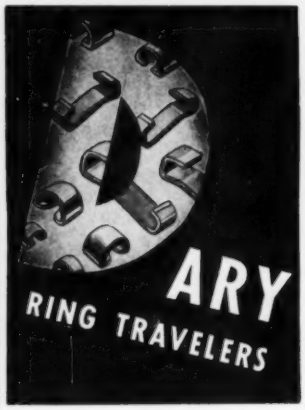
Fig. 1828 — 200-pound Monel Metal Gate Valve with screwed-in bonnet, screwed ends and inside screw rising stem.

*** Powell Valves are made in Bronze, Iron, Steel and a wide selection of Corrosion-Resistant metals and alloys. Valves of every type—Globe, Angle, Gate, Check, Non-return and Flush Bottom Tank Valves—are included in the Complete Powell Line.**

The Wm. Powell Company, Cincinnati 22, Ohio

DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

POWELL VALVES



"Give Them A *Ring*"

Get in touch with one of the four Dary representatives. Show him a ring—any spinning ring—and he'll show you the Dary Traveler that will perform best around it, because there's a Dary Traveler that's made to order for any spinning requirement you may have. The exclusive Dary Process is your guarantee that each Dary Traveler produced has the same uniform durability that's essential for efficient performance under difficult conditions.

Give your friendly Dary representative a ring today!

PROCESSED
SYMBOL OF SUPERIORITY

DARY RING TRAVELER CO.

Taunton, Massachusetts

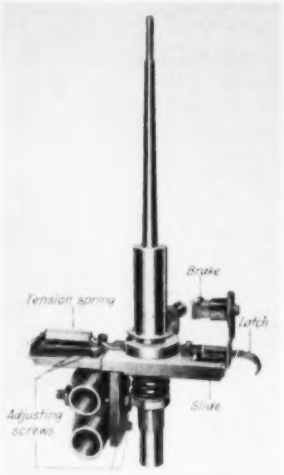
John E. Humphries, Box 843, Greenville, S. C.
John H. O'Neill, Box 720, Atlanta, Ga.
James H. Carver, Box 22, Rutherfordton, N. C.
Crawford Rhymer, P. O. Box 2261, Greenville, S. C.

and separating the eyelet rings into two rows, thus increasing the length of traverse between the tension gate.

Adjustment is made to the tensioning bar and to the consequent tensioning of the yarn by turning the thumb screw. This lengthening or shortening is effected by a rubber band which moves the bar.

Any snarls formed at the overend unwinding are gradually eliminated, its is claimed, as the yarn passes through the gate.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-116.



CONSTANT SPINDLE SPEED of this new brake-equipped spindle bracket is said to result from even spring tension and belt control.

Spindle Bracket Has Spring-Loaded Brake

An improved spindle bracket for throwing frames features a spring-loaded brake which brings spindle and bobbin to a quick, safe stop, leaving both of the operator's hands free for doffing. The bracket has been developed by Marquette Metal Products Co., Cleveland, Ohio.

The new brake-equipped Marquette spindle bracket consists of a slide which carries the spindle on a supporting bracket toward and away from the driving belt in a straight-line movement. A simple coil spring provides even tension in bringing slide and spindle into contact with the belt.

The latch disengages spindle from driving belt and anchors slide and spindle in a fixed position. At the same time, the whorl is brought into contact with the spring-loaded brake

PACKAGE

The BEST Way to Dye

ACETATE YARNS

Fast and brilliant colors

Reduce broken filaments

Large Batches

★

Atlantic Rayon
CORPORATION

Dyers and Converters of Synthetic Yarns for All Industries

Plant at Providence 1, Rhode Island

BRANCH OFFICE:
Empire State Bldg., 5th Ave.,
New York 1

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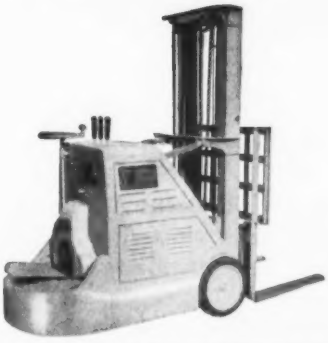
Can you afford

THE LUXURY OF A HAND TRUCK?

MOBILIFT *Saves on every load*



It is surprising how many well-equipped modern plants still cling to wasteful hand truck methods for moving materials. Every year hundreds of these plants become "Mobilized"—always with the same result. When Mobilift goes to work executives are amazed at the permanent economies which show up.

- —Mobilift saves hours of back-breaking labor
- —Mobilift increases available storage space
- —Mobilift reduces accidents to personnel
- —Mobilift reduces damage to materials
- —Mobilift eliminates needless rehandling

With such savings the cost of replacing hand trucks with Mobilifts pays off in a very short time. Check up on your operation now. Let a Mobilift expert show you how Mobilift can bring new efficiency and tremendous economy to your handling operations. Write us today for illustrated literature on Mobilift operations.

MOBILIFT CORPORATION T-47
835 S.E. Main St., Portland 14, Oregon

Please send me your illustrated folder on Mobilift operation.

Name_____

Firm_____

Address_____

City_____ State_____

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"The MIGHTY MIDGET"

District Sales Offices

NEW YORK CHICAGO BERKELEY LOS ANGELES ATLANTA DALLAS

FINDS KEY . . .

. . . to Buying Information

As secretary of the National Association of Hosiery Manufacturers, Inc., New York, Mr. R. C. Ball receives many requests for information concerning suppliers from manufacturers engaged in the textile industry.

To simplify his task and save valuable time, he finds McGRAW-HILL PRE-FILED TEXTILE CATALOGS the "key" to locating suppliers and information concerning their product.

"We use TEXTILE CATALOGS frequently in looking up sources of supply for many inquiries," says Mr. Ball.

If PRE-FILED TEXTILE CATALOGS is not available for buying reference at your mill, write to McGRAW-HILL CATALOG SERVICE, 330 West 42nd Street, New York 18, N. Y.

USE FILE 27-10

Wool Scouring

A formula using "C" Silicate ($Na_2O:2SiO_2$) resulted in improved quality and in greater recovery—an increase from 3 to 5%. "C" replaced part of the soda ash. The improved detergent action of "C" reduced soap consumption with savings to 75%.

PHILADELPHIA QUARTZ CO.
1139 Public Ledger Bldg., Phila. 6, Pa.

"C" & PQ—Reg. U.S.Pat.Off.

SILICATE P's & Q's

For more pointers on this or other PQ Silicate textile processes, write us.

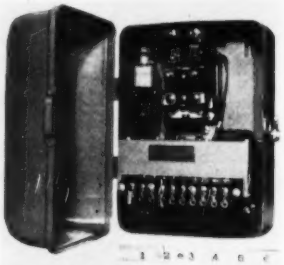
SOLUBLE SILICATES for INDUSTRY

plunger. The latch is easily released, whereupon the tension spring carries the slide forward so that spindle comes in contact with the driving belt.

This new brake-equipped spindle bracket is said to offer the throwster the following advantages: a standard Marquette roller-bearing spindle, operating at high speeds with large packages, can now replace the conventional short-shank spindle; there can be no slack twist; the brake is applied automatically when the latch is drawn back, and spindle is stopped quickly and safely. Spindles are easily plumbed and stay plumbed, as assembly has no pins or bushings to wear or replace.

The bracket is designed for mounting on rail tubes, or it can be supplied for mounting on flat rails.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-120.



STOP MOTIONS and feeler motions with low initiation current can use this new low-energy relay.

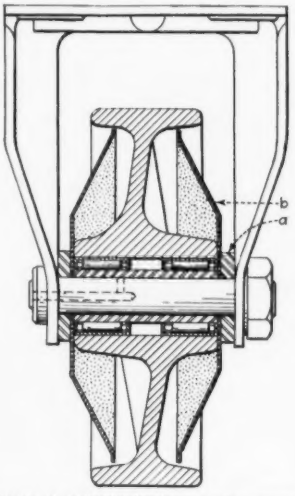
Relays Designed For Stop-Motion Use

New universal-type electronic detecting relays, designed to be operated from initiating circuits or contacts carrying small current at low voltage, are available from Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh, Pa.

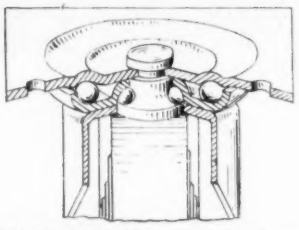
These relays are especially designed for drop-wire detection. They can be used for warp-stop control for looms using standard drop wires, for bobbin-changing mechanisms for looms, for feeler motions for all types of knitting machines, for stop motions for spoolers and warpers, for liquid-level controls, and for similar applications with a low-current initiation circuit. Operation may be initiated by the contacts of a drop wire, contact-making instrument, or a low-resistance conducting medium between the two contacts.

Low-energy relays are available as a single unit mounted in its own cabinet, or as multiple-unit relays involving a combination of ten circuits on a panel within a common inclosure.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-118.



YARN IS PREVENTED from winding around axle by spacer washer a and thread guard b.



DOUBLE BALL-RACE construction insures strength and long life.

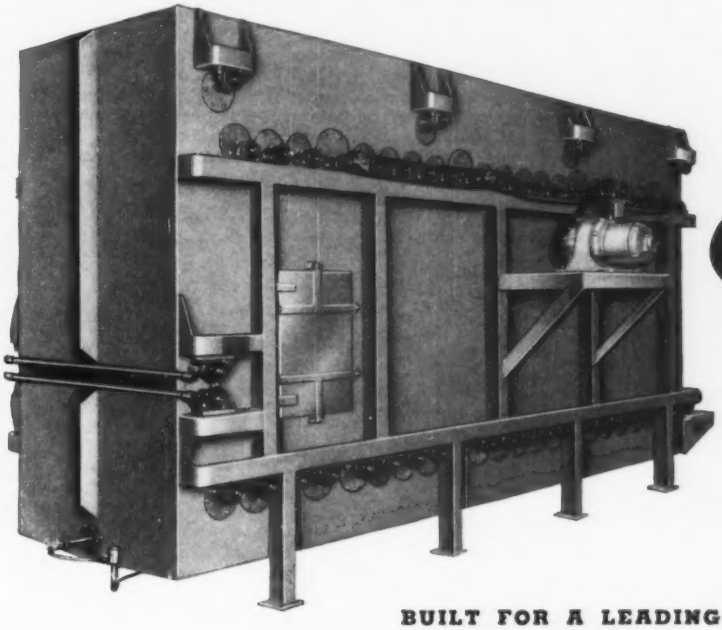
Textile-Caster Design Cuts Maintenance Cost

A new series of casters specially designed for use in the textile industry has been developed by The Bassick Co., Bridgeport, Conn. The new casters feature improved protection against yarn winding around axles, and improved double ball-race construction.

Adequate clearance between the leg of the caster and the thread guard is provided by a new spacer washer. The spacer washer causes yarn to fall through the space and not become wedged as in the past. Any possible accumulation can be easily removed without removing the wheel or taking the entire assembly apart.

Steel thread guards are locked in

STAINLESS STEEL ACID AGER



Engineered by TOWER

BUILT FOR A LEADING PRINTING PLANT

The above unit can be engineered to handle more than one end if desired. Equipped with positive pulse type acid feeding. The same design can be adapted for variable exposure time.

Tower engineers are being called upon with increasing frequency to design special units of stainless steel construction for all types of agers, together with complete complementary equipment as listed at the right. With personnel representing years of specialization in dyeing and finishing installations, plus extensive engineering staff and fabricating facilities, Tower offers you unified engineering, manufacture and installation of any special machinery you may require.

- Agers
- Pads
- Mangles
- Jigs
- Open Width Washers
- Rope Washers
- Stainless Steel Rolls of All Types
- Stainless Steel Boxes
- Stainless Steel Box Trucks
- Stainless Steel Kiers—Tanks

Write to O. B. Graichen, Textile Division, or 'phone Gaspee 1-4715

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TOWER IRON WORKS

PROVIDENCE · RHODE ISLAND

The finest machines for every knitted fabric
Mellor Bromley
Write for descriptive leaflets of the Mellor Bromley Interlock and many other top line machines.
MELLOR BROMLEY & CO. LTD.
LEICESTER, ENGLAND
Pullovers and cardigans—"Superloop" underwear fabric—Jacquard shaped vests with draw thread and welt—Jacquard outerwear—Elastic web and foundation garments—Interlock—Jacquard shaped underwear—Dress fabrics—Rib fabrics and rib ends—Multifeeder plain fabrics.

Turned Waste to Profits with—
TAYLOR-STILES

THREAD WASTE CUTTER

One medium size mill netted $785,699.98 on 24 different kinds of waste, by cutting and reprocessing it.

Waste ranged from card strips to sweeps. Let us know the amount and types of waste in your mill. We will tell you how a Taylor-Stiles cutter can help re-use the fibre and save you money.

Write for illustrated descriptive literature and prices.

TAYLOR-STILES & CO.
15 BRIDGE STREET
RIEGELSVILLE, N. J.

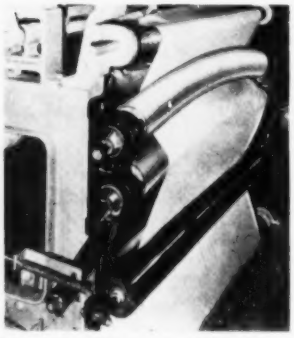
place between the space washer and the spanner bushing.

A bolt-and-nut axle has a lubrication fitting as part of the axle head. Bearings can be lubricated easily through the axle.

A heavy king pin provides great strength to the caster. A machined stud washer is locked tight around the king pin, adding strength, and providing a fully hardened, curved bearing surface for component thrust bearing. All bearing surfaces are accurately shaped with curved contact areas giving line contact with the balls. Bearing surfaces are hardened. The large-diameter ball cap and horn are projection-welded into an integral unit, a design making possible an unusually large main-load bearing raceway.

The new casters are available in swivel or rigid construction; with semi-steel; Atlasite solid tread, nonbrittle composition; or Baco soft-rubber treads.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-116.



***CLOTH DAMAGE** is prevented by this unit which prevents slack selvages from entering the shear.*

Slack Selvages and Wrinkles Eliminated

A new slack-selvage and wrinkle eliminator which makes use of free-wheeling expanders has been developed by Mount Hope Machinery Co., Taunton, Mass. The new unit designed to eliminate slack selvages and wrinkles from cloth before it enters the shearing machine. It thus prevents cloth damage and considerably reduces cloth-room slowdowns, the company states.

Two expanders are mounted in double brackets with a special pivoted, spring-balanced, lead-on roll. This unit is mounted on the entrance end of the shearing machine. Slack is taken up in either selvage as the cloth is threaded under the tension roll. Passing over the first and under the second expander, the cloth is held taut and spread evenly across its width as it enters the shearing machine.

The free-wheeling expanders have Neoprene sleeves which revolve on ball bearings around a stationary bowed axle.

To request further information, please use the card on page C of the Reader-Service dept.; refer to T-121.

Book Reviews

History of a Cotton Mill

PEPPERELL'S PROGRESS, by Evelyn H. Knowlton; Harvard University Press, Cambridge, Mass.; cloth, 511 pages, $5.

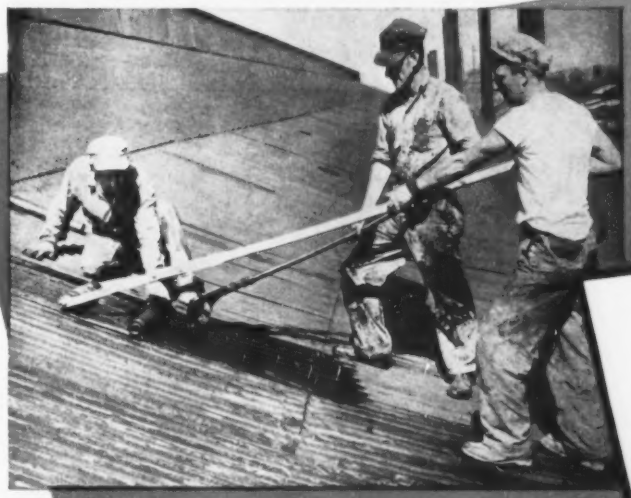
This impressive work, published earlier this year, is a factual history of one of our great cotton textile mills during the hundred years since 1844, at which early date Pepperell Mfg. Co. was incorporated near the falls of the Saco River in southern Maine. Steps in the company's progress were many and have gone on uninterruptedly over the decades.

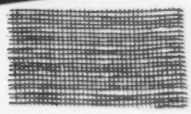
In unfolding the history of a successful American business, the author has given us factual materials for use to interpret as we see fit. She had access to all company's records, and "lived" with her history for three years. She emphasizes policy and operations rather than water power, ease of transportation, labor supply, proximity to markets, low tax rates, and other economic factors in our early American economy. Continued success to the organization came from constant attention to the details of procurement of supplies, production, sales, and finance, she holds.

This account is business history in its purest form: facts set forth objectively from company records, with illustrations running from a bill of lading dated 1856 to an aerial survey of the mills and village at Opelika, Ala., in 1941. Interpretation of the record in relation to broader American history is not indulged in. In a world torn by emotionalized opinions, unvar-

THE ROOF *Wears Fabric* WOVEN OF FIBERGLAS* YARNS!

***Another* textile opportunity *pays profits* because alert weavers used their ingenuity!**





"Membrane" fabric woven of Fiberglas yarns produces the highest strength-to-weight factor of any similar material. Warp strength—64 lbs. per inch wide strip, fill—92 lbs. Thread count 24 per inch in warp and fill. Weight per 50 yard roll—8 pounds.

FABRIC WOVEN OF FIBERGLAS YARNS

gives backbone to asphalt and coal tar pitch. Thousands upon thousands of yards of this waterproof "membrane" fabric are used in built-up roofs, above and below grade waterproofing and coating underground transmission pipe lines. Because the fabric is glass, boiling liquids cannot burn or char the cloth. It will not rot or decay. Dampness cannot penetrate the fibers. Its open weave molds easily and keys the bitumen compound tightly to uneven surfaces.

FIBERGLAS YARNS CAN BUILD NEW MARKET OPPORTUNITIES FOR YOU!

Fabric development men, converters and mills have solved many problems, achieved many successes by using Fiberglas yarns. Here are a few examples of fertile fields that are producing textile profits—fabrics for laminates, electrical insulation, industrial tapes, gaskets, conveyor belts, filter cloths, steam hose, convertible auto tops, fender welting, awnings, curtains, and upholstery. To solve your problems on new constructions or improved products, write or phone today for Fiberglas technical representative. Our research experts are at your service—either in your mills or in our textile laboratory. Owens-Corning Fiberglas Corporation, Textile Products Division, 16 East 56th Street, New York 22, N. Y.

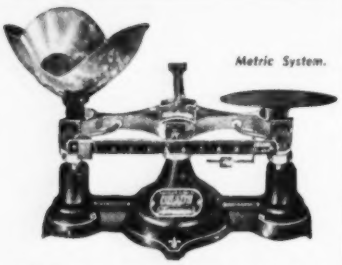
OWENS-CORNING FIBERGLAS CORPORATION makes only the Fiberglas Yarns—not the finished products.

- NONCOMBUSTIBILITY
- RESISTANCE TO MILDEW & ROT
- HIGH TENSILE STRENGTH
- DIMENSIONAL STABILITY
- RESISTANCE TO OILS & ACIDS
- EXCELLENT ELECTRICAL PROPERTIES

OWENS-CORNING FIBERGLAS *Yarns*

*FIBERGLAS IS THE TRADE-MARK (REG. U. S. PAT. OFF.) OF OWENS-CORNING FIBERGLAS CORP., FOR A VARIETY OF PRODUCTS MADE OF OR WITH GLASS FIBERS.

Widely Used!



OHAUS SCOOP SCALE

Here is one of several type scales of Reading Scientific Co. . . . this one equipped with a seamless brass scoop and iron weight plate. It is widely used by the textile industry for weighing dyes, powders, and chemicals in dry form.

$21.60
Without Weights
Scoop Scale with Grain Beam $24.60; with Avoirdupois Beam $24.40.

Beam graduated to 10 grams x 1/10th gram divisions. Capacity 2 kilograms (with 1000 gram weight set). Sensitivity 1/10th gram.

WRITE TODAY

READING SCIENTIFIC CO.
13th and Pike Sts., READING, PA.

Weave Mills that require

JUTE, SISAL or COIR FILLING

Rely On

LAZENBY WINDERS

Cops of extreme diameter and length, of maximum yardage and uniformity, are readily produced on LAZENBY equipment.

Send us a small supply of your yarn and we will wind and return with Testwind Report and Catalog.

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nished information like that in this book as to what private enterprise has been and can do comes as a godsend.

Keeping Industrial Plants Modern

DYNAMIC EQUIPMENT POLICY, by George Terborgh; McGraw-Hill Publishing Co., Inc., 330 West 42nd St., New York 18, N. Y.; cloth, 290 pages, $3.75.

This book is an attempt to rethink fundamentally the underlying theory of industrial-equipment policy. The phenomenon of equipment obsolescence is considered in detail in the light of its consequences upon the economy. The inevitable penalty of an undynamic equipment policy among industrial managers is high costs, wasted man-power, and inadequate output.

The author discusses basic principles of sound re-equipment analysis in a plant, and illustrates these principles with actual examples. Rules of thumb fairly generally in use are appraised, and the errors into which they frequently lead are pointed out. Statistical examples are given of the process of (1) functional degradation of capital equipment by age and use, and of (2) the replacement of such obsolescent equipment by superior types. Three requisites of a sound replacement policy are seen as (1) a reasonable test of mechanical replaceability, (2) a proper new-equipment-evaluation head or staff, and (3) a willingness to spend money.

Rayon Study From Europe

PHYSICS AND CHEMISTRY OF CELLULOSE FIBERS, by P. H. Hermans; Elsevier Publishing Co., Inc., 215 Fourth Ave., New York 3, N. Y.; cloth, 534 pages, $9.50.

The author of this book has for 15 years been a leading chemist in the European rayon branch of the textile industry, and is director of the Laboratory for Cellulose Research of the Algemeene Kunstzijde Unie, N. V., at Utrecht, the Netherlands. Comprehensive treatment is given the results and views of the scientific rayon research which seem to be fundamental for advanced study in basic thought and research on rayon. Space is devoted to the processes of solution and swelling in the light of latest physicochemical ideas, while avoiding colloid-chemical terminology.

The first 155 pages deal with the structure of rayon, the second 162 pages with general properties of cellulose in the form of fibers, and the final 203 pages with the manufacture of synthetic fibers. An appendix, author's index, and subject index are included.

Employees' Confidence Can Be Built Up

EMPLOYEE COMMUNICATIONS FOR BETTER UNDERSTANDING, by the National Association of Manufacturers, 14 West 49th St., New York 20, N. Y.; paper, 30 pages, no charge.

This booklet is designed to assist managers, particularly in smaller plants, to lay out and carry through an enlightened program of easier communication from the front office to the work areas in the plant and back again. Reasons are given why every employer should tell fully his company's story to its employees, and why employers should listen sympathetically to employees as much as possible. Channels, media, methods, and techniques of this two-way communication are discussed in detail—from oral-personal relationships through printed and visual media. A selected list of references is included.

DYES & CHEMICALS

Versatile Cleaner Designed for Mill Use

Aqua-Turge with Emulsite, a new chemical designed for rapid-action cleaning and degreasing in textile mills, has been developed by Brooks Boiler Treatment Co., 3304 87th St., Cleveland 4, Ohio.

The new product is said to be non-inflammable, non-toxic, and entirely harmless. The product is highly concentrated and water soluble, a formulation of strong emulsifiers said to penetrate, emulsify, and disperse soil, grease, oil, or film from mill floors, machines, washroom fixtures, walls, and windows.

Because of its properties, Aqua-Turge with Emulsite is said to be superior to flammable and toxic solvents, caustics and alkalies, soaps, and synthetic detergents.

To request further information, please use the card on page C of the Reader-Service dept.; refer to D-22.

"But you can't buy that kind of a motor..."

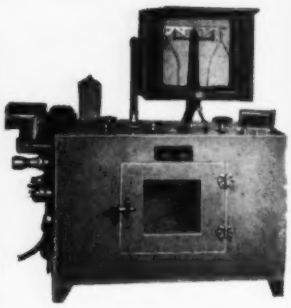
• How many times have you heard somebody that ought to know better say something like that about motors, pumps, compressors or what-have-you? And how many times have you heard somebody else say, "Oh yes you can. I saw just what we need in Blank Company's ad yesterday."

Advertising pages in this magazine are packed with *news* about your business. They contain information about products and services designed to help *you* do your job quicker, better and cheaper.

To be well-informed about the latest developments in *your* business, *your* industry . . . and to stay well-informed . . . *read all the ads too.*

McGRAW-HILL PUBLICATIONS

Textile Testing



For *accurate* testing of water content in yarn. The 8-basket oven, with 3" x 3" baskets, may be changed to 6 baskets, 4¼" x 4¼", both 6" deep. Occupies table space 20" x 40".

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Baskets are designed specially for each class of work. Write for details on EMERSON OVENS to fit your process.

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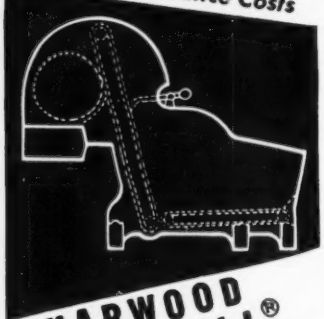
EMERSON APPARATUS CO.
177 Tremont St., Melrose 76, Mass.

For HIGH Production and LOW Maintenance Costs



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Geo. S. HARWOOD & Son

Specialists in Textile Feeding Machinery Since 1863

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WORCESTER 8 MASS

News of the month

Draping of Cotton. Fundamental research to improve the draping qualities of cotton has been undertaken by Fabric Research Laboratories, Boston, Mass., under a contract awarded by the Research and Marketing Administration of the Department of Agriculture. The project is designed to overcome the natural stiffness of cotton, which, while desirable for many uses, puts this fiber at a disadvantage when draping qualities are essential. The project may run up to four years, and progress reports will be required from the contractor at regular intervals.

Textiles from Straw Cellulose? Cellulose can be produced from straw, including rice straw, corn straw, bamboo cane, and other plants containing at least 30% cellulose, according to Swiss invention claims. The invention enables production in a continuous, automatic process in which the raw material need not be assorted beforehand. The ears, knots, and all other parts are used. It is said to give an output of 35% of refined cellulose. The dissolution of the cellulose takes place without pressure at less than 100° C. through the use of diluted lyes that do not destroy the vegetable matter. Finatra Trust Co., Zurich, is negotiating the license.

Australian Fiber Invention. The fiber which is contained in the stems and leaves of a standing crop of Australian garden canna can be cut and extracted in one operation by a machine which was recently patented by an Australian inventor. The fiber is wound automatically on spools in a continuous form in an operation that takes place as part of the harvest. The crop can be harvested twice a year. Canna produces about 10 tons of green material per acre, with a fiber content of about 0.3 tons. A 20-acre nursery is being planted at Penrith, near Sydney.

TEXTILE CALENDAR

AATCC, Southeastern Sect., Georgia Institute of Technology, Atlanta, Ga., Oct. 1, 1949.

Southern Combed Yarn Spinners Assn., 24th annual meeting, Hotel Charlotte, Charlotte, N. C., Oct. 5, 1949.

Textile Operating Executives of Georgia, Georgia Institute of Technology, Atlanta, Ga., Oct. 8, 1949.

Textile Machinery Exhibition, Manchester, England, Oct. 12 to 22, 1949.

North Carolina Cotton Manufacturers' Association, annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 13 and 14, 1949.

American Association of Textile Chemists & Colorists, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., Oct. 13 to 15, 1949.

Committee D-13, ASTM, fall meeting, Benjamin Franklin Hotel, Philadelphia, Pa., Oct. 19 to 21, 1949.

Carded Yarn Association, annual meeting, Sheraton-Bon Air Hotel, Augusta, Ga., Oct. 27 and 28, 1949.

Cotton-Textile Institute, annual meeting, New York, Nov. 3, 1949.

AATCC, Northern New England Sect., Lowell Textile Institute, Lowell, Mass., Nov. 4, 1949.

AATCC, Piedmont Sect., Charlotte Hotel, Charlotte, N. C., Nov. 5, 1949.

Southeastern Industrial Vision Congress, Georgia Institute of Technology, Atlanta, Ga., Nov. 6 to 8, 1949.

AATCC, Philadelphia Sect., Kugler's Philadelphia, Pa., Nov. 11, 1949.

Plant Maintenance Show, Auditorium, Cleveland, Ohio, Jan. 16 to 19, 1950.

National Cotton Council, annual meeting, Hotel Peabody, Memphis, Tenn., Jan. 23 to 25, 1950.

Southwest Air-Conditioning Exposition, State Fair Park, Dallas, Texas, Jan. 23 to 27, 1950.

ACMA, annual convention, Biltmore Hotel, Palm Beach, Fla., March 30 to April 1, 1950.

Carpet Institute, Carpet Fashion Opening, New York, April 17 to 27, 1950.

Knitting & Allied Crafts Exposition, Sponsored by Underwear Institute and National Knitted Outerwear Assn., 71st Regiment Armory, New York, April 24 to 28, 1950.

National Assn. of Hosiery Mfrs., annual meeting, Claridge Hotel, Atlantic City, N. J., May 1, 1950.

American Textile Machinery Exhibition (and Allied Industries) sponsored by National Association of Textile Machinery Manufacturers, Atlantic City Auditorium, Atlantic City, N. J., May 8 to 12, 1950.

British Industries Fair, Earls Court, London, England, May 8 to 19, 1950.

Cotton Manufacturers Assn. of South Carolina, annual meeting, Fort Sumter Hotel, Charleston, S. C., May 11 to 13, 1950.

National Materials Handling Exposition, International Amphitheatre, Chicago, Ill., June 12 to 1, 1950.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 2 to 7, 1950.

American Association of Textile Chemists & Colorists, annual meeting, Hotel Statler, Boston, Mass., Oct. 19 to 21, 1950.

LEAD PIPING

...keeps

Hungry Acids in Line

One of acid's most useful jobs is to serve as the "digestive juice" of the process industries. But, unless properly controlled, acids can be destructive to the "alimentary tracts" of processing systems.

• •

That's why men wise in the ways of handling acids, look to *lead* for protection. And why they look to the leader in lead . . . National Lead . . . for their lead and lead-lined pipe and fittings.

• •

National Lead offers you three types: regular all-lead pipe . . . steel pipe with cold-expanded lead linings . . . and "United Tubond" lead-lined pipe, for extreme pressure, vacuum, temperature or vibration.

• •

In "United Tubond," the lead lining is permanently *bonded* to the steel outer casing. The bore is smooth and seamless. Positive lead-to-lead joints are assured by extending the lead lining over the face of the flange.

• •

The choice depends upon the job. But whichever you choose, *look to the Leader for Lead.* You'll know you're getting all of lead's advantages, engineered by National Lead into pipe and fittings that will fight acid corrosion and mechanical stress . . . and keep hungry acids in line.

Look to the Leader for Lead

. . . in everything from lead pipe . . . valves . . . sheet . . . and lead-lined or lead-covered equipment . . . to complete acid recovery plants

NATIONAL

Lead Company

New York 6; Baltimore 3; Buffalo 3; Chicago 8; Cincinnati 3; Cleveland 13; Pittsburgh 12; St. Louis 1; Boston 6 (National Lead Company of Mass.); Los Angeles 23 (Morris P. Kirk & Son, Inc.); Philadelphia 25 (John T. Lewis & Bros. Co.); Atlanta (Georgia Lead Works, Div. of Cincinnati Branch); Toronto, Canada (Canada Metal Co. Ltd.).

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NEWS OF THE MONTH

Calls for Cotton Modification. The finding of ways to modify cotton so that added fiber values might erase any price differentials would change the whole picture of fiber competition, said M. Earl Heard, vice president in charge of research at West Point Mfg. Co., Shawmut, Ala., in an address at the closing session of the third annual Beltwide Cotton Mechanization Conference at Bennettsville, S. C. By adding sheen and drape to cotton fabrics, for example, while retaining the staple's other properties, cotton mills could win back markets in women's garments. The field is wide open, he maintained, not only for reducing costs through harvest mechanization, but also for learning new ways to treat cotton.

Human vs. Machine Output. To avoid misunderstanding with employees, mill supervisors should let their help know that pay rates depend on elements of personal work rather than mere machine output, advised C. W. Bendigo, editor of TEXTILE WORLD, in a recent talk at the Greenville Industrial Relations Conference for Supervisors at Blythe Shoals, S. C. In addition, employees should be shown how increased production and productivity are today due to increased mechanization rather than increased operator effort, the speaker said.

New England on the Spot. Greater productivity and fuller use of improved machinery, which already has been installed in many mills, can do much to save the New England textile industry with its 250,000 jobs, according to a joint statement issued by Nathaniel M. Mitchell, president of Barnes Textile Associates, Inc., and Gilbert F. Van Blarcom, treasurer of Ralph E. Loper Co., textile engineers. Compared to other textile-manufacturing regions, productivity in New England ranges as much as 50% less. High production costs are preventing the industry from selling goods successfully. Union officials have been very understanding of the problem. Perhaps when more employees better understand that they can produce more with the new machinery without taking on excessive work assignments, greater productivity will result, the two consultants said.

Decentralization Analysis. The production of woolen and worsted broad-woven fabrics is a reasonably decentralized industry, while the production of industrial chemicals is less widely decentralized, according to a recent Federal Trade Commission analysis submitted to Congress. Based on 1947 figures, the report showed American Woolen Co. leading its field with 16.7% of the woolen and worsted industry's net capital assets. Collins & Aikman Corp. was second with 6.8% of the industry's facilities, while Goodall-Sanford, Inc., had 4.6%. Other leaders were Botany Mills, Inc. (2.2%), Chatham Mfg. Co. (2.0%), Cleveland Worsted Mills Co. (1.8%), Wyandotte Worsted Co. (1.3%), and Susquehanna Mills, Inc., (1.0%). Leaders in the industrial chemical field were E. I. du Pont de Nemours & Co., Inc. with 21.5% of the country's net capital assets, Union Carbide & Chemical Co. with 15.0%, Dow Chemical Co. with 9.0%, Allied Chemical & Dye Corp. with 6.3%, American Viscose Corp. with 5.6%, American Cyanamid Co. with 5.3%, and Monsanto Chemical Co. with 5.3%.

Nylon Production. Production of nylon yarn is now estimated to be about 70,000,000 lb. per year, according to best estimates in the trade. At the moment, observers estimate that 30,000,000 lb. go into women's hosiery, 20,000,000 lb. go into warp-knit fabrics, 15,000,000 lb. go into woven goods, and 5,000,000 lb. into tires. However, E. I. du Pont de Nemours & Co., Inc., sole manufacturer, has not made public its production figures. Officials of the company do say that additional poundage will be avialable before the end of 1950 as a result of increased facilities at Seaford, Del., and Chattanooga, Tenn.

To Analyze Mill Safety. Physical safeguards in textile mills will be the subject at the opening textile session of the National Safety Congress, 37th annual convention of the National Safety Council, to be held October 24 to 28 in Chicago. Discussion of safety training and testing programs will include talks by M. De Milt Aird, Revere Copper & Brass, Inc.; Dr. James Sterner, Eastman Kodak Co.; William D. Owen, Visking Corp.; D. J. Moffie, North Carolina State College; R. L. Rogers, Textron Southern, Inc.; S. R. Brookshire, Engineering Sales Co.; and Charles L. Trommer, Mohawk Carpet Mills.

ACMI Is Born. A new industry-wide association, the American Cotton

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THERE ARE many reasons why it's to your advantage to look to us for all your aluminum needs. Here are a few of them:

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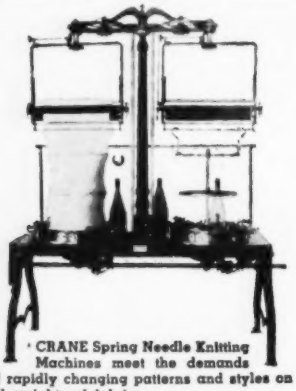

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Manufacturers' Institute, has been formed for the benefit of the entire cotton-textile industry. It has supplanted the Cotton-Textile Institute and the American Cotton Manufacturers Assn., both of whom have voted to dissolve in favor of the new organization. Unification of the industry is a step which has long been sought by cotton-mill men. The new ACMI is a non-stock and non-profit corporation, chartered under the laws of North Carolina.

Georgia Tech Textile Ceremonies. The 50th anniversary of the A. French Textile School of the Georgia Institute of Technology and the opening of its new $1,025,000 W. Harrison Hightower Textile Building with its almost $1,000,000 of equipment will be observed with special ceremonies on Friday, Oct. 14. Plans include guided tours through the building and an inspection of machinery and equipment, which will be described and demonstrated by representatives of the respective manufacturers.

ITT Chemistry Head. The Institute of Textile Technology, Charlottesville, Va., has appointed Dr. Jack Compton the head of its chemistry division. He was for five years with Celanese Corp. of America at Rome, Ga. Previously, he was in the textile department of B. F. Goodrich Co.

New PTI Staff Members. Philadelphia Textile Institute has added three new members to its staff. They are John A. Waugh, instructor in cotton processing and manufacture; William R. Watt, instructor in chemistry; and Miss Eileen B. Dwyer, assistant librarian.

New Mill in West Indies. A second modern textile plant, with 8,000 spindles and an initial capacity of 8,000 lb. daily of cotton, silk, rayon, and other natural and synthetic fibers, will be established near Trujillo City, Dominican Republic. The new plant will manufacture print cloths, towels, cotton sacks for sugar, rice, and corn, and fine threads.

Rayon Production "Down Under." James Nelson Ltd., Lancashire, England, rayon firm, has taken an option on a plant site near Launceston, Tasmania, and expects to begin production with 200 looms. Burlington Mills (U.S.) and Bruck Silk Mills (Canada) are already weaving rayon in Australia; as does a local organization, Prestige, Ltd. James Nelson Ltd. is planning also to get into the production of viscose filament in Australia, calculating in terms of 2,500,000 lb. per year. Courtaulds, Ltd. has also already decided to establish an Australian filament plant at Tomago, near Newcastle, New South Wales. It will invest £20,000,000 initially, and may double the amount later, depending whether or not Oscar Kohorn & Co. Ltd., New York, finally decides to produce in Australia. Courtaulds will manufacture tire cord and rayon yarn for 35,000,000 yd. of Australia's requirements of 50,000,000 yd. a year.

British Cotton Group Arrives. Spinners, twister hands, and weavers will be represented in Great Britain's cotton-textile group that arrives this month to study methods that may be helpful in increasing British productivity. The group will be broken down to teams that will consist of workers, technicians, and supervisors; each team will concentrate in its own field. Ideas will be sought on increasing output and reducing unit costs.

Italian Dilemma. Exports of Italian textile machinery declined 60% in value and quantity from January through June, compared with the same period last year, according to the Assn. of Italian Engineering Industries. Foreign import restrictions on Italian machinery are said to be responsible. Meanwhile, more foreign textile machinery has been imported into Italy, especially from Britain. At the same time, Switzerland is negotiating with Italian textile-machinery manufacturers to take over orders for textile machines for overseas markets which Switzerland cannot meet.

Austria Needs Looms. The Federal Ministry of Property Custody and Economic Planning, Vienna, announces that it needs about 1,000 automatic looms and 1,000 jacquard looms. American firms interested in supplying such looms should submit their non-binding offers, together with descriptive literature to the "Bundesministerium fuer Vermoegenssicherung und Wirtschaftsplanung," Ballhausplatz 1, Vienna 1, (Federal Ministry of Property Custody and Economic Planning); copies of these offers should also be addressed to the "Fachverband der Textilindustrie" (Trade Association of the Textile Industry) Boersegasse 8, Vienna , the ministry says.

ANOTHER "STIENEN" ACHIEVEMENT

*PATENT PENDING

THE

Stienen

Reg. Trade Mark

RAYON PACKAGE DYEING MACHINE

has been developed to supplement our Rayon Cake Dyeing Machine. It provides the dyer of rayon yarns with far greater flexibility.

While our Rayon Cake Dyeing Machine has it's distinct advantages for certain mills, the "Stienen" Rayon Package Dyeing Machine is of utmost importance to the entire rayon processing trade.

Package dyeing of rayon is ideal wherever the source of supply is in wound form. Rayon from any size cakes, cones or tubes may be dyed in the package form. Different types of rayon and synthetic yarns may all be dyed in this machine.

***The cost of rewinding to the package for dyeing* is negligible in comparison to the cost of skein winding. Quality of the original yarn is maintained, as no fibre disturbance takes place in our method of rayon package dyeing.**

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Standard Fabricators

INCORPORATED

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NEWS ABOUT Suppliers

Equipment Suppliers

Allis-Chalmers Co., Milwaukee, Wisc., has named J. F. Fitzsimmons manager of the commercial-research department, succeeding J. R. Reed, who has resigned to establish his own business. Mr. Fitzsimmons had been supervisor of the research section since 1946.

Automatic Transportation Co., Chicago, Ill., through its representative in Newark, N. J., J. M. Barclay, Inc., has appointed Harold B. Staniar to its sales staff. He will handle the Union County, N. J., territory. Harry S. C. Folk and Joseph J. Powle have been added to the Automatic sales force in the New York branch office.

Bahan Textile Machinery Co., Greenville, S. C. has named Edward F. Bahan president and treasurer to succeed his late father, William H. Bahan. Mrs. Esther C. Bahan and Mrs. Winifred Bahan Peters have become vice presidents.

Baker Industrial Truck Div., Baker-Raulang Co., Cleveland, Ohio, has appointed Edgar E. George district sales representative, with headquarters in High Point, N. C. He will serve as material-handling engineer for Baker truck applications and will work with the sale of the equipment. Associated with Mr. George is James H. Rigby, formerly materials-handling co-ordinator with Burlington Mills, Greensboro, N. C.

Brown Instruments Div., Minneapolis-Honeywell Regulator Co., has made Charles E. Sharp its Chicago branch industrial manager. He succeeds I. A. Robinson, who has been made regional industrial-sales manager for all mid-west and western territories. George E. Gilliam will manage pyrometer-supplies sales nationally for the firm.

H. W. Butterworth & Sons Co., Philadelphia, Pa., has plans under way for a new foundry and additions to the machine shop and storage facilities at Bethayres, Pa. A tract of 22 acres along the Reading Railroad tracks is being used. The program will increase the company foundry facilities approximately 25%. When consolidation of production facilities is completed next summer, the Butterworth plant in Providence, R. I., will be closed.

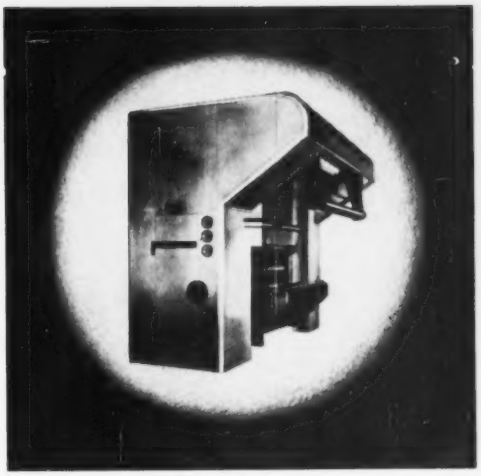
A. CLAYTON GRAHAM has been appointed New England sales representative of Standard Pressed Steel Co., Jenkintown, Pa. His line will include socket screw products, self-locking nuts, and steel shop equipment.

Chain Belt Co., Milwaukee, Wis., has appointed John C. Toomey its district sales engineer in the Detroit office.

Dow Chemical Co., Midland, Mich., is planning to construct a new $5,000,000 ammonia plant at Freeport, Tex. Building will start in January. Capacity is to be 100 tons a day.

Draper Corp., Hopedale, Mass., has purchased for $18,000 a 35-acre site near Swannanoa, N. C., eight miles west of Asheville, for the purpose of manufacturing looms or machinery parts. Plans for building construction are still indefinite.

Fairbanks, Morse & Co., Chicago, Ill., has appointed Frank M. Mason, Jr., director of engineering. He has for several years been manager of the



"NATIONAL" *Nylon* HEAT SETTING MACHINE

featuring CONTACT HEATING WITH FINER CONTROL OF TEMPERATURE

New "National" design provides an improved method of contact heating with an unusually high degree of accuracy in control of temperature. Cylinders are individually heated by automatically controlled gas burners, with heat transferred to "Dowtherm" core. "Dowtherm" constantly agitated by patented device. Temperature held by controller sensitive to plus or minus 0.2°F. Operating temperatures to 500° F. and over. Tests show gas consumption less than 85 cu. ft. per hour at speed of 50 yards per minute. ***Write for complete information.***

AUTOMATIC PIECE GOODS DRYERS
KNIT GOODS DRYERS

NATIONAL

TENTER SYSTEMS
YARN, SKEIN AND STOCK DRYERS

THE NATIONAL DRYING MACHINERY CO.
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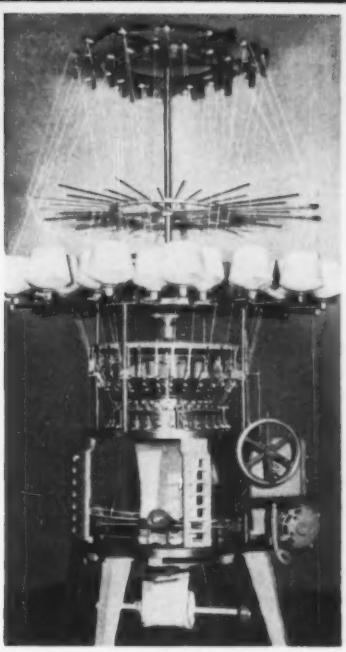
WESCO STOPMOTIONS

FOR
OUTERWEAR • UNDERWEAR • HOSIERY
STANDARD EQUIPMENT ON
EDMOS KNITTING MACHINES



Edmos: Type EEM 20" — 30 feeds

TWO OF A KIND

Economy, Versatility, Simplicity of operation of any knitting machine equipped with Wesco Stopmotions, is recognized in most mills around the world today. Wesco is the "safety-first" word for Superior Knitting. Knitters know it — machine builders use it to get the best performance from their machines. When you purchase new knitting machines — *Specify "Wesco" Electric Stopmotions.*

LOOK FOR WESCO
on all these knitting machines:

H. Brinton
Charles Cooper Co.
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Jacquard Knitting Mach. Co.
Lamb Knitting Mach. Co.
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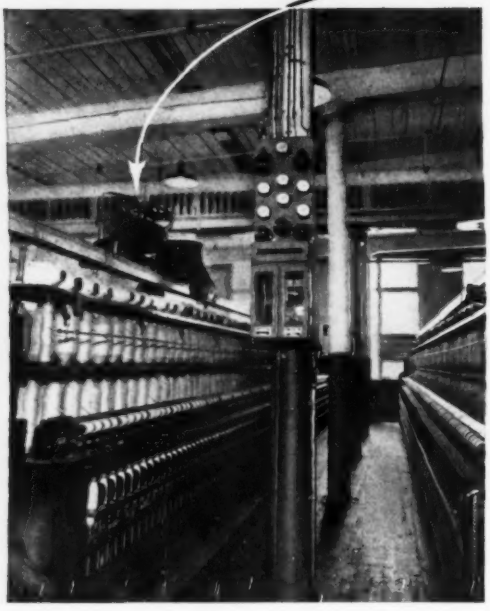
STANDARD THE WORLD OVER

STOP-MOTION DEVICES CORP.
1471-77 Fulton St. Brooklyn 16, N. Y.
One of a series of knitting machine builders. Others to follow.

No Fly on this Ceiling

with Parks Ceiling Cleaner



Ceilings as clean as frames. No lint or dust. Housekeeping simpler. Operatives happier. Yarns better.

Parks Ceiling Cleaner

A Paying Addition

This addition to mechanical cleaning rounds out the work of ParksTurbo Traveling Cleaner (CT type, track on frames).

Rotating as it travels, each Parks Ceiling Cleaner unit directs its current of air upward. Lint, dust and fly are not allowed to settle on lights, piping, ceiling and things.

Present or future installations of Parks Certified Climate Air Conditioning are not interfered with.

Parks-Cramer Company

Fitchburg, Mass. PARKS Certified Climate Charlotte, N. C.

NEWS ABOUT *Suppliers*

research division in charge of all research developments and patents.

Fischer & Porter Co., Hatboro, Pa., is giving an instrumentation course at the Hatboro plant, Oct. 10 to 14. The course will cover manufacture, calibration, installation, operation, and maintenance of the company's line of "Flowtator" primary and secondary process-control instruments. Some time will also be devoted to the basic principles of variable-area flow measurement.

Gould Storage Battery Corp., Trenton, N. J., is giving a 5-day course on the care, maintenance, and charging of storage batteries from Nov. 14 to 18 at Trenton. The course is the 23rd in the Gould long-term program of manufacturer instruction to battery users.

Photoswitch Inc., New York, has appointed Oscar C. Stark general sales manager with headquarters at 39 Broadway. He was formerly with Square D Co. in sales and management capacities.

Rostan Machinery & Equipment Co., New York, has been made U. S. representative of a new line of Italian worsted-manufacturing machinery developed by Officine Meccanichecigardi Soc. Az., Milan. [TW, Aug. '49, p. 160.]

Standard Mill Supply Co., Providence, R. I., has appointed Edward S. Malley a traveling sales engineer. He will be assigned to New England territory as a specialist in machinery and equipment.

Synthane Corp., Oaks, Pa., has transferred Edward W. Wilson from its Chicago office to its Milwaukee staff as a direct sales representative assisting Howard A. Tyner.

Taylor Instrument Co. has appointed William H. Corwin its public-relations director. Since 1943 he has been editor of the company publication, **The Taylor Meteor**, and has prepared other company literature.

Universal Winding Co., Providence, R. I., will exhibit its complete line of textile machines for both the Universal and Atwood divisions at the Textile Machinery Exhibition in Manchester, England, this month. Universal machines on exhibition will include the No. 50 Precise winder, the No. 250B nylon single-end-sizing machine, and the No. 44 Roto-Coner drum winder. Machines to be shown by the Atwood Division will include the Model-10 ring twister, the Model-110 up-twister, and the Model-200 redraw. J. Alan Nasmith will be in charge.

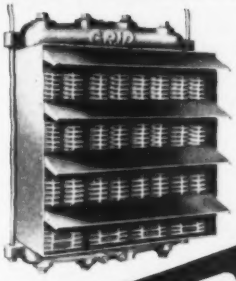
SAMUEL B. APPLEBAUM, vice president of Liquid Conditioning Corp., has been made manager of the cold processing water-treating division of Cochrane Corp., Philadelphia, Pa., parent company of the liquid-conditioning firm.

Warner & Swasey Co., Cleveland, Ohio, has a backlog of loom orders which is as large as the company will permit. Production on the loom is well under way after the six-month strike earlier in the year. Deliveries in lots may start by Jan. 1.

Westinghouse Electric Corp., Pittsburgh, Pa., has instituted a new motor-exchange plan for single-phase and three-phase, 1- to 20-hp., frame 203 to 326, a.c. motors. The plan is designed to minimize the inconvenience if motor failures occur—to get another motor on the job promptly with the least possible loss of productive time. If a motor fails, it may be exchanged immediately at a Westinghouse warehouse for a motor of identical rating.

Whitin Machine Works, Whitinsville, Mass., has purchased the land and buildings of the former Guild-Pinecrest

The WIDER FIN SPACING *in Grid Unit Heaters* MAKES THEM SUCCESSFUL IN YOUR INDUSTRY



HIGH TEST ONE PIECE CONSTRUCTION . . . CAST IRON HEATING SECTIONS . . .

GRID UNIT HEATERS

Gentlemen:

The first group of GRID Unit Heaters were installed in our plant in 1937. Our experience has been very satisfactory. The units perform efficiently and other than a small amount of attention to the motors, we have had no maintenance at all on them.

Yours very truly
A MIDWEST TEXTILE MILL

IT'S THE free area in GRID heating sections that prevents plugged up heating units. GRID condenser sections are made with wide "fins" properly spaced for maximum radiation yet far enough apart to prevent plugging up due to lint laden air. No staggered arrangements, but a straight, clear passage from back to front. Air passes through freely without obstruction. This feature is standard construction with GRID. No special arrangement is needed. That's why several textile mills report GRID installations best for their service conditions.

GRID Unit Heaters are designed for low outlet temperatures and greater air delivery to the floor line—*not the ceiling* . . . that's another reason why textile mills all over the country are using GRID Unit Heaters . . . they are heating their plants comfortable without maintenance or down time due to heating failures.

GRID "fin" heating sections are ONE piece construction high test cast iron—the metal for permanency . . . no electrolysis to cause corrosion, breakdowns, leaks or heating failures, because there are no dissimilar metals used in GRID construction. GRID Unit Heaters will safely withstand steam pressures up to 250 lbs.

WRITE today for complete GRID story—CUH-1049-TW, capacity, tables, and engineering data.

D. J. MURRAY MANUFACTURING CO.
WAUSAU, WISCONSIN

STAINLESS STEEL SMALL WARE FOR THE DYEHOUSE

Ruggedly Built for SEVERE SERVICE

Welded, reinforced construction gives Blickman small ware extra durability to withstand hard daily use in the busy dyehouse. For sizes and specifications send for our small ware circular.

STAINLESS STEEL PAILS
Built to take a beating. Welded construction for extra strength. Round corners for easy, thorough cleaning. Made of #18 gauge stainless steel for corrosion resistance. Ears are formed under rolled rim of the pail and transmit part of the load to the rim. Capacity to 20 quarts. Write for Bulletin 7028.

STAINLESS STEEL BUCKETS
Easy to clean. For extra strength quarter inch thick reinforcing bands are welded at top and bottom. Handles of ½ inch diameter mild steel rod are welded to upper reinforcing band. Round corner bottom speeds cleaning. Built of heavy gauge stainless steel. Capacity to 100 gallons. Send for Bulletin 7029.

STAINLESS STEEL DIPPERS
Made to withstand rough handling. Hemispherical bowl of #16 gauge 18-8 stainless steel with #16 gauge stainless tapered handle-socket welded on. Capacities 1 pint to 4 quarts. Handle of 4 quart size reinforced. Send for Bulletin 7030.

Write for further information

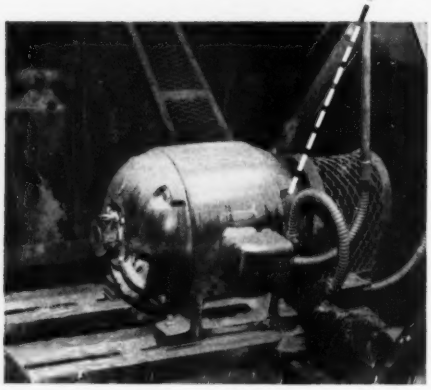
S. BLICKMAN, INC. 410 Gregory Ave. Weehawken, N. J.

Manufacturers of stainless steel textile equipment, dye boxes, linings, cylinders, dry cans, rolls, hoods, tanks

DC SILICONES

Silicone News

Here's where DC Silicone Insulation Saved $700 per hour



It cost Standard Gypsum Company of California about $700 per hour every time heavy overloads caused the 25 h.p. motor driving screw conveyors in the mixing house to fail. And such expensive motor failures were occurring every 30 to 60 days until the silicone insulated 10 h.p. motor shown above was installed in December, 1948.

This silicone insulated motor is only about ½ the size and weight of the motor formerly used, yet, it is still performing the same work after 8 months without failure. That's what is meant when we say Dow Corning Silicone Electrical Insulation gives you more power per pound, greater reliability, reduced maintenance costs and increased production.

Every day, more and more engineers are specifying DC Silicone Electrical Insulation in motors exposed to excessive heat, moisture, or heavy overloads. If you would like to learn why these engineers are relying on Silicone Insulation, phone our nearest branch office or write for booklet AJ-10.

DOW CORNING CORPORATION
MIDLAND, MICHIGAN

Atlanta • Chicago • Cleveland • Dallas
Los Angeles • New York
In Canada: Fiberglas Canada, Ltd., Toronto
In England: Albright and Wilson, Ltd., London

Photo courtesy Standard Gypsum Company of California

Dow Corning FIRST IN SILICONES

NEWS ABOUT *Suppliers*

JAMES A. DAVIES (left) and ARTHUR C. MERRILL, JR., (right) are the principals in a sales-department change at Arnold, Hoffman & Co., Providence, R. I. Mr. Davies has been transferred to the sales department from the sales-service and application laboratories. Mr. Merrill, formerly chief chemist at Lawrence (Mass.) Print Works Div., Aspinook Corp., has taken on Mr. Davies' laboratory position.

Mills, Inc., Linwood, Mass. The machinery manufacturer had been using space at the mill for storage, and does not plan to run the plant machinery, which is being rapidly liquidated.

Chemical and Yarn Suppliers

Atlas Research Laboratories, Mertztown, Pa., recently dedicated a new building as a memorial to the late Maximillian F. Wirtz, founder of the firm in 1892. The new building is two-story, brick, with over 5,000-sq. ft. area. Unit labs are 15x15. A library of over 2,000 technical volumes is on the second floor.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has revised downward a considerable number of its dyestuff prices, amounting to as much as 8% on some individual products. The firm has named Christian Conradi manager of European sales-service for the organic-chemicals department. Formerly resident representative in Scandinavia, in his new position Mr. Conradi will work out of Basle, Switzerland. The company noted recently with public observances the increase of the number of individual stockholders to a record 100,000.

Glass Fibers, Inc., Waterville, Ohio, recently appointed Richard Baker its plant manager. Until recently, he was in charge of production control.

E. F. Houghton Co., Philadelphia, Pa., has appointed three men to revised positions in the eastern-sales division. Orum R. Kerst will head the north section, working out of Worcester, Mass. J. R. Clendenning will head the south section, working out of Philadelphia. A. C. Smith will coordinate the sales activities of the two sections.

Niacet Chemicals Div., U. S. Vanadium Corp., a unit of Union Carbide and Carbon Corp., has transferred Arthur A. Bouchet to the sales department. Former research chemist in the sales-development laboratory, he succeeds James A. McCusker, resigned.

Tennessee Eastman Corp., Kingsport, Tenn., has selected a site in Gregg and Harrison Counties near Longview, Texas, for the erection of a plant to manufacture certain basic raw materials for use in operations at Kingsport. The site was selected for nearness of raw materials such as oil and natural gas; and for the availability of a suitable water supply, satisfactory transportation facilities, high-caliber manpower, and good living conditions. Operations will start late in 1950.

Other Services

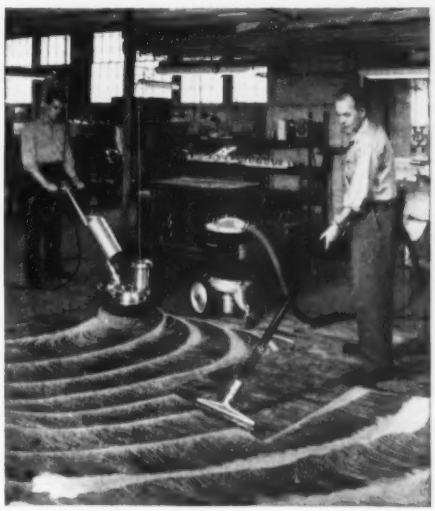
Bjorksten Research Laboratories, Chicago, Ill., has appointed John B. Eisen section leader at the Madison, Wis., laboratories. Mr. Eisen was formerly group leader with Chemical Research Laboratories of American Viscose Corp., Marcus Hook, Pa.

Chemstrand Co. is the

Are Dirty Floors Your Problem?

Solve it with the KENT Fast-Cleaning Team!

Keep your floors clean and keep maintenance costs down! Less spoilage of your product . . . higher worker production . . . less man-hours lost through injury . . . more sanitary . . . better appearance!



THE KENT FAST-CLEANING TEAM IN ACTION

Pictured on the left is the KENT Floor Scrubbing Machine for fast cleaning of all types of floors. On the right is the KENT Electric Mopper for picking up dirty scrub water quickly, completely—even out of cracks and crevices. Makes floors dry rapidly! It can be converted for picking up dry dirt too!

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Save thousands of dollars in

NYLON SETTING
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Dries and polymerizes in ONE operation

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UNA-RAY does away with expensive dry-box and other equipment in nylon setting — drying and polymerizing in one fast operation. Safety...without scorching, spotting, "gas fading" or deterioration of fabric. Insures uniform color both sides. Simple...foolproof! *Ask for Bulletin TW-10.*

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"Exsize" is the registered trademark of Pabst Brewing Company.

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NEWS ABOUT *Suppliers*

name of the new fiber-research organization formed by Monsanto Chemical Co. and American Viscose Corp. The new company was formed last May for research and development work on synthetic fibers.

Mechanical Industries, Inc., Fittsburgh, Pa., a new engineering company whose activities will be limited to industrial ventilation, smoke, dust, and fume control, has been formed. Morton I. Dorfan is president and general manager.

Mutual Boiler Insurance Co., Boston, Mass., has opened a resident inspection office at Amawalk, New York. Inspections will be under the direction of W. G. Rance. The new office has been set up for benefit of Mutual policy-holders in the surrounding area.

Pennsylvania State Employment Service, Harrisburg, Pa., has developed a tailor-made test for selecting job applicants for particular types of work. On request, the employment service will let employers give the test themselves at their plants, if they give it under certain controlled conditions. In the textile field, the following job tests can be given: weaving, mule spinning, quilling, winding, and drawing in. The service is interesting those mills with costly training programs of high labor turnover.

Texas Technological College, Lubbock, Tex., is conducting a series of laboratory experiments on samples of wool to determine shrinkage, fineness, length of lock, and grease content of various fleece samples. The purpose of the project is to furnish wool-producers records, as determined by side samples, to purebred sheep breeders for selecting top breeding animals.

U. S. Testing Co., Inc., Hoboken, N. J., has opened a cotton-fiber-testing and textile-testing branch at Memphis, Tenn. The laboratory will supplement with scientific tests the data now provided by Memphis cotton classers. Facilities will also be provided for conducting tests on finished yarns and fabrics in order to assist mills in evaluating a particular cotton from the opening room through the spinning and weaving operation. In Hoboken, the testing company has developed an apparatus for comparison of anti-static characteristics of fibers.

NEWS ABOUT *Mills*

Cotton-Mill News

Aberfoyle Mfg. Co. has become the exclusive mill licenser of daylight-fluorescent nylon and acetate-rayon yarns, as developed by Switzer Bros., Inc., Cleveland, Ohio.

American Textile Co., Inc., Pawtucket, R. I., has appointed Martin H. Gurley, Jr., research director. He was formerly in charge of textile and paper research and development at Esselen Research Corp., Boston, Mass.

Anniston Mfg. Co., Anniston, Ala., has begun construction on building which will house additional office facilities.

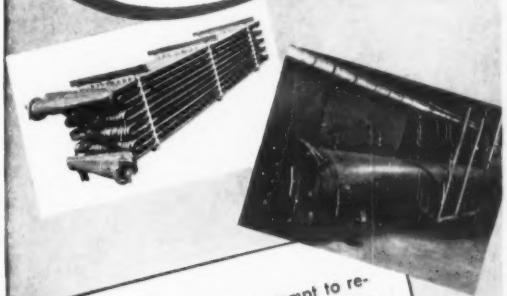
Automotive Fibres, Inc., purchased cotton mill at Uniontown, Ala., following merger with California Cotton Mills Co., owner of Uniontown mill. New company, which has main plant and general offices in Detroit, reported total sales of over $50,000,000 in 1948. No changes are planned in plant in Uniontown, of which R. C. Forrest is general manager.

Athens Mfg. Co., Athens, Ga., has installed additional looms to make possible manufacture of new weaves which have now advanced beyond experimental stage. New product for women's dresses is on the line of a waffle weave.

Callaway Mills, Manchester, Ga., has installed new equip-

KELLEY RECLAIMERS

...*Profit* AS WELL AS *Heat* RECLAIMERS



If you are not making an attempt to reclaim heat in the spent dye liquor, for example, or are doing it with inadequate or antiquated equipment, it may pay you to get in touch with our engineering department.

It's purely a matter of economics . . . of sitting down with one of our representatives and doing a little figuring.

It would not be difficult to determine the reclaimable heat . . . how much it would cost to reclaim it . . . and how much saving there would be by installing the proper type and size Kelley Reclaimer, pit or closed type.

It is well to keep in mind that often it is "profit" . . . perhaps the profit . . . that can be reclaimed along with the heat units.

THE PATTERSON-KELLEY Company, Inc.

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Offices and Representatives in Principal Cities

Reinforced *"Verybest"* Check Straps

JACOBS

Designed to follow angle of the picker stick in picking motion and to provide longer life and more wearing surface — the only Reinforced Check Strap.

"Verybest" Straps and Strapping

For all weaving loom needs. Cut from quality hairy and oak leather to individual requirements, each type of Strap is designed and made to give maximum service.

Now available — Jacobs Rubberized Fabric and Interwoven Fabric Loom Strapping. Write us for literature — and new price and discount sheet.

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E. H. JACOBS NORTHERN DIVISION

The Bullard Clark Company

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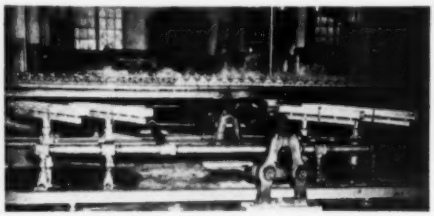

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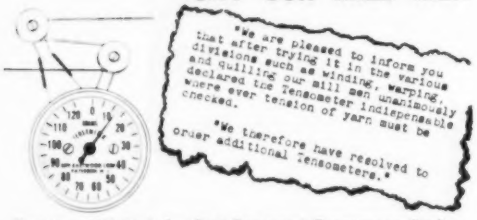
"We are pleased to inform you that after trying it in the various divisions such as winding, warping, and quilling our mill has unanimously declared the Tensometer indispensable where ever tension of yarn must be checked.
"We therefore have resolved to order additional Tensometers."

You too, will find the Sipp-Eastwood Tensometer "indispensable." It will save you money and time by enabling you, your workers and overseers to detect faulty tensions that cause tight and loose ends, and later, "seconds."

The Tensometer is used: In warping, where uneven tension may cause end breaks or adhesion of ends during weaving. In winding, to adjust swifts uniformly. In quilling, to prevent hard and soft quills.

The new Sipp-Eastwood Tensometer is a pocket-size precision instrument that gives a steady reading without fluctuation in all uses. Knurled case prevents its slipping out of your hand.

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NEWS ABOUT *Mills* (Continued)

ment designed to permit burlers and graders to perform more thorough jobs.

Canadian Lace Products, Ltd., Montreal, Que., has let contract to R. M. Clark Co., Ltd., Montreal, for new one-story plant on local site on Jeanne d'Arc St., reported to cost about $75,000.

Carolina Fiber Mills, Inc., Camp Wadsworth, S. C., announces plans for construction of additional storage facilities to cost $40,000. Warehouse annex, which will be 100x150 ft., 16 ft. high, is expected to be completed within 60 days. Addition will be used to house cotton waste for processing by firm.

Clark Thread Co., Albany, Ga., plans erection of one-story warehouse addition. Sherley Hudson, Americus, Ga., is architect.

Dyersburg Cotton Products, Inc., Dyersburg, Tenn., has had 20 new Model 39200 Union Special Machine Co. units installed in meat bag sewing department.

East Greenville, Pa.—Large manufacturing company is planning erection of yarn mill here which will contain 10,000 sq. ft. of floor space with additions to follow. Although name of firm has not been disclosed as yet, it is known to manufacture mercerized yarns for hosiery and underwear. C. P. Campbell, president of upper Perkiomen Valley Board of Trade, Pennsburg, Pa., is conducting negotiations.

Father George Cotton Mills, Sanford, N. C., is gradually replacing looms; about half of 36-in. looms are to be replaced with new looms.

Industrial Cotton Mills, Inc., Rock Hill, S. C., has construction well under way on addition to present offices, which will about double present floor space.

Joanna Cotton Mills Co., Joanna, S. C., has installed refrigerated air conditioning in one of its spinning rooms. Officials said system had proved more than satisfactory, with conditions more comfortable for workers and operating efficiency improved. Company has washed air installations in weaving, carding, and other two spinning departments. New refrigerated installation cost about $106,000.

Limestone Mfg. Co., Gaffney, S. C., is being modernized at a cost of $2,500,000. This mill and Hamrick mill were purchased in 1947 by M. Lowenstein & Sons, Inc.

Marion Mfg. Co., Marion, N. C., has received first of four additional Barber-Colman automatic quillers. Company has also ordered hoods for plant's four slashers.

Morgan Cotton Mills, Inc., Laurel Hill, S. C., has closed bids for addition to Phillips Mill buildings. No estimate of cost has been announced. Matthews & Butler, Laurinburg, N. C., is architect.

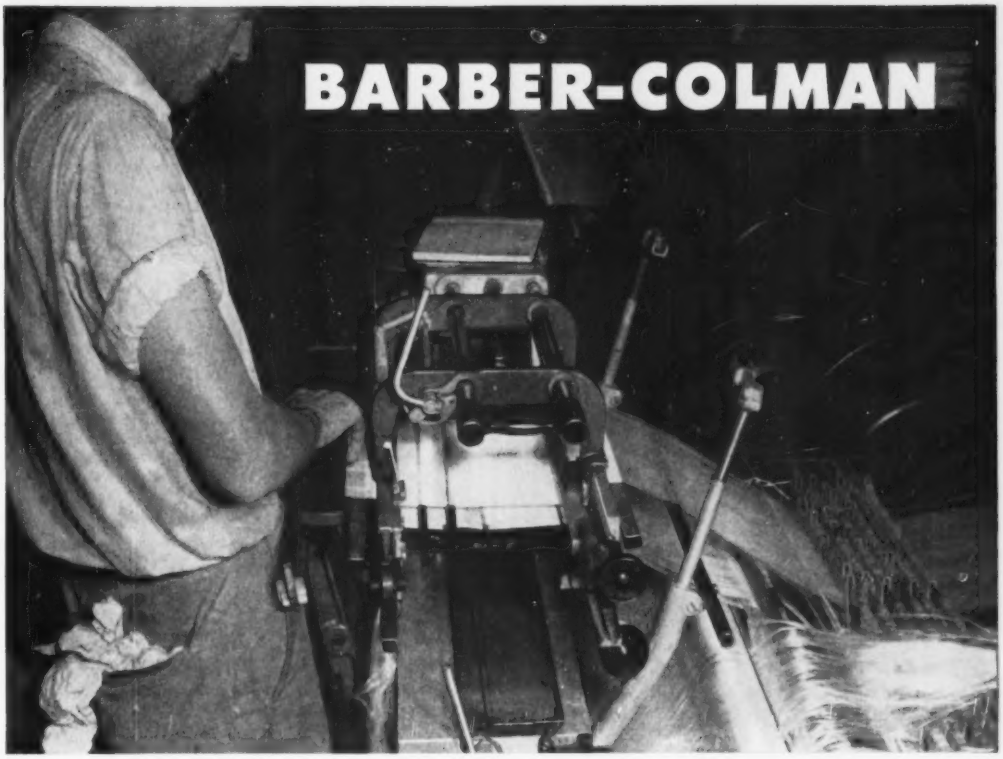
Narrowcraft, Inc., Central Falls, R. I., has been chartered with incorporators consisting of Oscar O. Ponton, Ida Ponton, Laura Ponton of Central Falls, R. I., for purpose of manufacturing, weaving, braiding, etc., all types of narrow web fabrics, yarns, etc.

Pawtucket Standard Braid, Inc., Pawtucket, R. I., has work underway on plant addition. Henry M. Soule, Pawtucket, has general contract; and Providence Steel & Iron Co., Providence, has steel contract.

Pilgrim Corp., Hinesville, Ga., is installing two looms and 350 braiders for production of narrow fabrics. Officials indicate that additional equipment may be installed at later date.

R. I. Lace Works, Inc., West Barrington, R. I., is completing work on new lace plant on Bay Spring Ave. Machinery is being installed for manufacture of lace goods. Central Engineering & Construction Co., Pawtucket, is contractor. Subcontracts have been awarded to: Rumford Steel Products, East Providence, steel; Superior Glass Co., Inc., glazing; Maguire Roofing Co., roofing and sheet-metal work. Plumbing, heating, and electric work is being done by owner's forces.

Spartan Mills, Spartanburg, S. C., has awarded contract to Bahnson Co., of Winston-Salem, for humidity control system in lower weave room



PORTABLE WARP TYING MACHINES MAKE SUBSTANTIAL COST SAVINGS IN SMALL MILLS

Portable
WARP TYING MACHINE

Many of the smaller mills are finding that a Barber-Colman Portable Warp Tying Machine is a profitable investment — even though its full-time capacity is not needed or used. This machine offers a fast and accurate means for tying-in new warp *at the loom.* It can be handled satisfactorily in confined and hard-to-reach spaces and in loom alleys as narrow as 12". An inexperienced hand can learn to operate it capably in a comparatively short time. Overall production capacity of the machine averages 3500 to 4500 ends per hour, varying with the sley of the warp. On high sley warps, production may run as high as 5500 ends per hour. Interchangeable knotter units enable the machine to tie a wide range of counts, and models are available to handle cotton, wool, silk, or synthetics. Tying is accurate and uniform and so much more efficient than common hand methods that the machine will pay for itself quickly in cost savings. *For full details and specific recommendations for your mill, consult your Barber-Colman representative.*

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FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND

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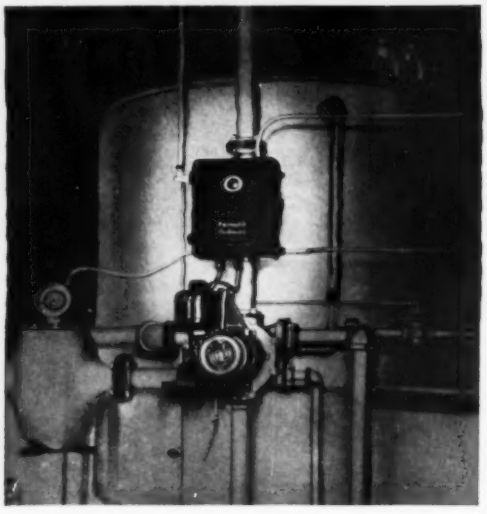

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NEWS ABOUT *Mills* (Continued)

of No. 1 plant. Installation is part of $500,000 program for air systems in both No. 1 and No. 2 mills. It is understood that company is also installing new stainless-steel kettles in slasher room which will enable mill to use more than one type of sizing formula at a time.

Springs Cotton Mills, Springsteen plant, Chester, S. C., has begun excavating for addition. Contracts have already been signed for machinery, which will be delivered in January, 1950. Addition will house combers and drawing sufficient to change whole mill from carded to combed broadcloth. It is also planned to install additional 5,000 spindles, as well as rewinding equipment. Plants should be converted by April, 1951, and will employ about 200 additional operatives.

J. P. Stevens & Co., Inc., plans to erect $500,000 office building on 21.6-acre plot on West Market St., Greensboro, N. C., to house Carter Fabrics Div. operating group. Three-story building will measure 250x60 ft., contain approximately 45,000 sq. ft. of operating space, and will house Carter Fabrics administrative offices which, because of inadequate space, have been forced to operate in four different locations in Greensboro.

Southern Weaving Co., Greenville, S. C., manufacturers of narrow fabrics, has approved plans for construction of one-story addition to mill for expansion of weaving department. Cost of building and equipment will be more than $100,000.

Travora Mfg. Co., Graham, N. C., has been sold and will be known as Travora Textiles, Inc. E. T. Bost, Jr., is president; J. Harris Cannon, secretary and treasurer; and M. A. Rhyne, director.

Wabasso Cotton Co., Ltd., Three Rivers, Que., has begun construction of addition to cost $25,000. Addition will be in form of second story to existing weave shed and will be of similar construction to present building.

West Point Mfg. Co., unit at Shawmut, Ala., plans one-story laboratory and technical-research building.

Woolen- and Worsted-Mill News

A. L. Textile Co., Somersworth, N. H., was opened recently under ownership of August Lepoutre interests, operators of Lafayette Worsted Spinning Co. and Verdun Mfg. Co., both in Woonsocket, R. I. August Lepoutre is president and treasurer; Jacques Lepoutre, vice president; Henry Dursin, secretary; Stanley M. Burns, clerk. Plant will spin and weave worsteds.

Andrew Worsted Mills, Inc., Central Falls, R. I., has been chartered with incorporators consisting of James A. McGuirk, Frank L. Martin, Henry DiMascolo, Providence, R. I., for purpose of buying, selling, manufacturing, etc., woolen, cotton, and rayons.

Arms Textile Mfg. Co., Manchester, N. H., has let contract to Davison Construction Co., Manchester, for boiler house at mill, to cost about $60,000.

Cornwall, Ont. — Woolen mill at Alexandria owned and operated by Frank McCormick burned to ground recently. Loss has been estimated at $80,000. Building was 123 years old. Its operation has been continuously in hands of McCormick family.

Edenfield Mills, Inc., Leesville, S. C., has obtained charter to manufacture, dye, and finish woolen, worsted, and cotton and synthetic fibers and goods. Authorized capital stock is $500,000. William I. Kent is president, Russell H. Kent is vice president, and Warren T. Kent is secretary-treasurer. Lieut. Gov. George Bell Timmerman, Jr., Lexington, N. C., is one of directors.

Forstmann Woolen Co., Passaic, N. J., has been developing with Service Machine Co., Elizabeth, N. J., a new-type wool comber to replace the older-type French machine. Blueprints have been completed.

Hollands (Canada) Ltd., Smith Falls, Ont., branch of parent company in Manchester, Eng., has completed new plant in Smith Falls, and much of machinery for production of worsted yarns has been installed. New mill, under construction since June, 1948, will

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Engineering and Experience That Counts!

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Lace spindle tapes 10 times faster with Clipper No. 25 Spindle Tape Hooks. Tapes can be prepared in advance so frame is shut down only long enough to place new tape on the pulleys and join ends with connecting pin. Tapes run true—last longer—run smoother—require less tension—VIBRATION IS ELIMINATED

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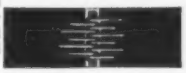
Lace condenser tapes with Clipper No. 25 Condenser Tape Hooks. Clipper laced tapes, prepared in advance, can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving.



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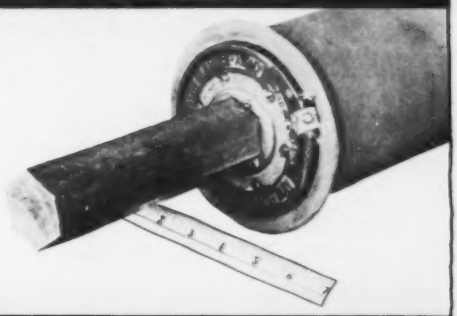
Solve "Wet Service" EXPANDING PROBLEMS with . . .



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MOUNT HOPE EXPANDERS are used for spreading and for eliminating wrinkles in all fabrics, from rayon marquisettes to tire cord, plastic film and paper.

A MOUNT HOPE ENGINEER will be glad to advise you upon request without obligation.

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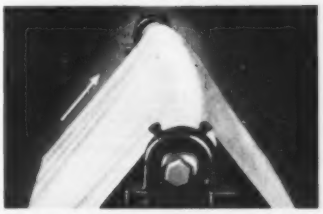

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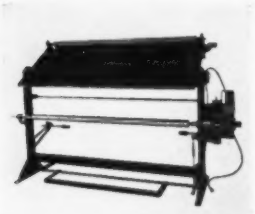

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Dependable. Easily operated. Desired variable speeds. Accurate Measurements. Ball Bearing foot operated clutch leaves hands free. Veeder-Root clock driven directly from winding drum. Two models — one for weaving plants; one for dyers, printers, converters.

Price: $475, FOB Paterson, with tube holder: $525.

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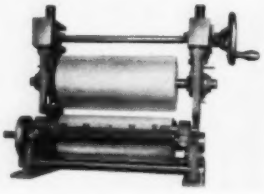
All steel. Costs $150–$200 less than others available. Neoprene covered cylinder. Servo-Tex finger-tip control available; speeds 20 to 1 ratio. Smooth constant torque. For lab or production. Priced with Servo-Tek drive, $700; without drive, $500.



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NEWS ABOUT *Mills*

cost about $500,000 for buildings and machinery. It is one-story, 188x133 ft., of concrete block construction with manufacturing section completely windowless. Air conditioning and steam-operated unit heaters are other features of plant. Luncheon, recreation, locker, and wash rooms are provided in one wing.

Jefferson Woolen Mills, Knoxville, Ky., is completing installation of new machinery and equipment as part of $340,000 modernization program for carding and spinning departments.

Pike Mills Ltd., subsidiary of David Pike & Co., Ltd., Yorkshire, Eng., which has started construction of plant in St. Malo area in Quebec City, Canada, expects to be in operation before end of year. About $300,000 will be involved in buildings, machinery, etc., for manufacture of fine worsteds. Yarns will be purchased and production dyed and finished on commission basis. Present plans call for installation of 36 looms for weaving fine worsted fabrics for men's and women's wear. Mill will be under direction of John B. Heilpern, who held similar position in one of parent company's mills in Yorkshire. Firm has opened sales office under name of Ebor Mills (Canada) Ltd., in new Sternthal Bldg., Montreal.

Ramseur Worsted Mills, Inc., Ramseur, N. C., which is being constructed by owners of Guerin Mills, Inc., Woonsocket, R. I., has work going forward rapidly. Plant will be under management of R. J. Fontaine, Jr.

Rocky Gorge Woolen Co., Berwick, Me., has been purchased by Greendale Salvage & Supply Co., Worcester, Mass. Worcester concern is now seeking buyer for property.

Roger Spinning Co., Inc., Pawtucket, R. I., has been chartered with capital of $25,000, to operate mill. Josephat Chauvin, 30 Belleville Ave., Woonsocket, R. I., is principal incorporator.

S. Stroock & Co., Inc., Newburgh, N. Y., has purchased land and building adjacent to Stroock mill, formerly occupied by Weil Bros. Textiles, Inc. Purchase will add 85,000 sq. ft. of floor space for manufacturing purposes. Final plans for utilization of space have not as yet been formulated.

Textile Weavers, Ltd., Grand'Mere, Que., has work well underway on construction of two-story addition to present building. Addition will be two stories, 80x100 ft., of brick, and heated throughout by latest-type hot-water heating. Estimated cost is $25,000.

Ziock Industries, Inc., Tex-Ranch Plant, Brownwood, Tex., has begun operations in new plant which contains 1,536 mule spindles and 20 looms. Plant manufactures cloth for women's suits and dresses, automobile fabrics, and similar products.

Synthetic-Mill News

Burlington Mills Corp., Greensboro, N. C., weaving mill has received a second Liberty Mutual Insurance Co. accident-prevention award, for compiling 2,000,000 man-hours of operation without a lost-time accident. The plant has not had a lost-time accident since Sept., 1945.

Canadian Celanese, Ltd., Drummondville, Que., has begun construction on additional five bays to No. 21 plant building and new building No. 35 for research. Cost of work, which is part of long-term program, is estimated at $250,000.

Columbia Cellulose Co., Ltd., division of Celanese Corp. of America, Prince Rupert, B. C., has completed steel construction on several buildings of high-alphapulp plant which is being erected on Watson Island. Installation of underground sewers, pipe lines, and water mains is well advanced. Large aggregate and batch plant is functioning successfully. Office building is expected to be ready for occupancy in near future.

Courtaulds (Canada) Ltd., Cornwall, Ontario, has begun production in new staple fiber plant, which marks completion of $16,000,000 expansion program.

Duplan Corp., Lincolnton, N. C., is changing production of Lincolnton unit. Company has offered for sale spinning

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Yarns

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WHY waste hours cooking starch size for slashing and weaving, or for the finishing process? The Gaulin Homogenizer will produce a smoother, better size in a matter of minutes—without boiling the starch mixture. It will also reduce the required amount of starch and softeners, as well as the consumption of steam.

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The following is an extract from a letter recently received from a mill in which the Waste-Meter was installed.

I have just had the pleasure of looking over the latest weekly waste report and comparing it with one made 6 or 7 months ago. The progress that we are making in our waste saving is very encouraging.

This last report is the best we have had since the Waste-Meter went in and with few exceptions there has been a good reduction in waste in all departments. The total for the mill shows a tremendous saving.

I sincerely hope that we can continue to improve this and I am sure we will get the same good results from the Waste-Meter after it is put in our other mills.

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NEWS ABOUT *Mills* (Continued)

equipment of mills, which has been previously on spun rayons, and will install number of new looms in space. Plant will be almost 100% on filament goods when change is completed.

Erwin Cotton Mills Co., Durham, N. C., has completed installation of machinery at company's plant at Neuse, N. C., for weaving spun and filament rayon cloth.

Greenwood Mills, Inc., (Harris unit) near Greenwood, S. C., now under construction at cost of more than $4,000,000, which will be equipped for rayon weaving, is expected to be ready for operation this fall. Harris, S. C., has been designated as name of location of new Harris plant by Southern Railway Co. Station was previously known as Cothran. In addition to plant, company has also under construction a complete model mill village of modern brick homes.

High Point Weaving Co. Division of Burlington Mills Corp., High Point, N. C., plans $175,000 improvement program. Additional equipment will also be installed.

Navaho Weaving Co., Esmond, R. I., is building one-story 25x30-ft. boiler house and stack, and will install new boiler equipment. Bowerman Bros., 70 Bath St., Providence, R. I., has general contract.

Pee Dee Mills, Inc., Rockingham, N. C., has work well under way on installation of new equipment for production of spun-rayon fabrics. It is understood output will be given over to men's and women's wear fabrics.

Visking Corp., North Little Rock, Ark., cellulose casings, will equip new mill addition for production of synthetic fabrics for use for toweling, filtering, and other service. Cost is reported close to $1,000,000. Main offices are in Chicago.

Knitting-Mill News

Academy Co., Monroe, N. C., is newly organized concern for manufacture of hosiery, and will operate under authorized capital stock of $100,000. Incorporators are O. F. Smetena, Richard Nordman, and Burgess Kenimer.

Adams-Millis Corp., High Point, N. C., is removing eight full-fashioned knitting machines from High Point plant. Old machines are being installed in new plant at Graham, N. C., and will be replaced at High Point unit with new knitting machines.

C. W. Anderson Hosiery Co., Clinton, S. C., began operations in large new finishing plant recently. Building has 14,000 sq. ft. of floor space and is of concrete construction. Latest equipment has been installed as expansion of company, which has been in business for several years. Plant will finish women's full-fashioned hosiery.

Ardmore Hosiery Mills, Inc., Ardmore, Tenn., newly organized concern, is now in operation on women's 51-gage full-fashioned hosiery, using four machines. C. H. Austin is president; T. Jones, treasurer; and John Hardy, manager.

Dennis Mills, Inc., Lumberton, N. C., may divert entire production of cotton knit fabric to manufacture of T-shirts. In last six months, plant's production of T-shirts has grown to require 25% of cloth output.

Diamond Full - Fashioned Hosiery Co., Inc., High Point, N. C., is nearing completion of modernization program which has been underway for past three years. New wing has been added which doubles size of seaming and looping department and new machinery has been installed in new structure. Division containing dye house and boarding department has been enlarged to four times previous size. In addition, total of 85% of mill is now operated under controlled air conditioning.

Georgia Hosiery Mills, Blakely, Ga., has leased former state patrol station at Villa Rica, Ga., and is now operating with about 70 machines in production. Knitting and looping is being done at Villa Rica and finishing is being done at Blakely.

Globe Knitting Works, Grand Rapids, Mich., will soon begin moving its 12 hosiery-knitting machines to auxiliary plant in Zeeland, Mich. Move will consolidate all hosiery knitting in Zeeland and allow com-

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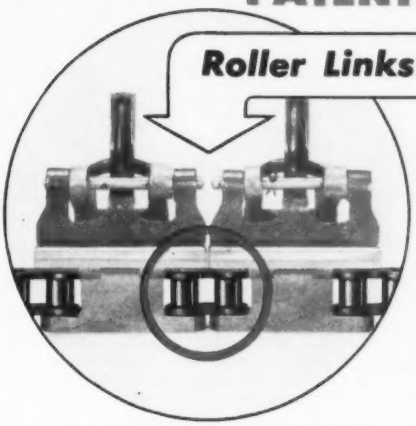

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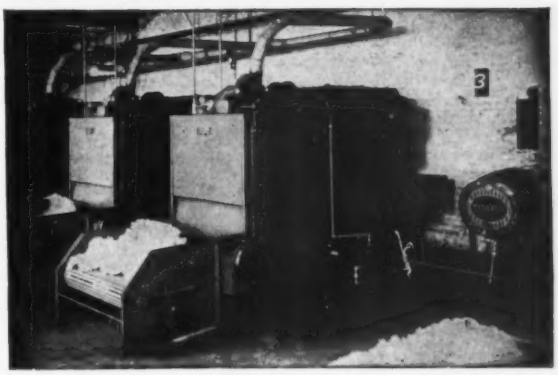

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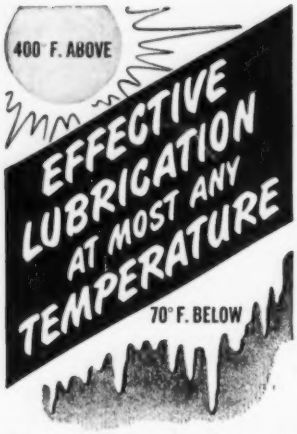

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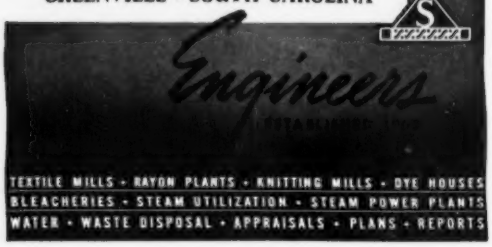

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NEWS ABOUT *Mills*

pany to expand its underwear manufacturing in Grand Rapids plant.

Heller Knitting Mills, Inc., Providence, R. I., has been chartered with incorporators Helen Donnelly, Apponang, R. I.; Mary C. Kelly and Edward M. Brennan, Providence, R. I., for purpose of manufacturing, knitting, weaving, etc., rayon, wool, silk, and other textile materials.

Hudson Hosiery Co., Charlotte, N. C., is constructing new building at Oakhurst, N. C., which will be equipped with new 60-gage full-fashioned knitting machines. Company's 45-gage machines will be shipped to Stuttgart to equip German branch.

Kay Hosiery Mills, Inc., Kutztown, Pa., has been incorporated for manufacture of hosiery and other apparel. Authorized capitalization is 1,000 shares of $100 par stock, of which $60,000 has been paid. Directors are Joseph B. Kay, Merion, Pa.; Sylvia Hassenfeld, Providence, R. I.; and Caroline Wells, Allentown, Pa.

Liberty Hosiery Mill, Gibsonville, N. C., which began operations in June on limited scale, is scheduled to be in full operation in October when new dyeing and finishing plant will be completed.

Man-Lee Mfg. Co., Ashboro, N. C., is newly organized concern which will manufacture knit goods under capital stock of $75,000.

Na-Rene Hosiery Mill, Inc., formerly of Quakertown, Pa., has purchased mill at 14 E. Moreland Ave., Hatboro, Pa., and all 51-gage equipment of Hatfield Hosiery Co. All equipment at Quakertown location has been moved to Hatboro, and Na-Rene Co. will continue to operate from that location.

Norris Hosiery Mills, Murfreesboro, Tenn., is now in operation, using 48 machines in manufacture of fine-gage anklets and half hose, fancies and plain.

Orient Hosiery Ltd., Brockville, Ont., plans to start production of fine-gage, full-fashioned, nylon hosiery in its $2,000,000 plant which has been under construction since September, 1948. One story, air-conditioned building containing approximately 60,000 sq. ft. of floor space, occupies part of 22-acre plot. Thirty Reading 51- and 60-gage full-fashioned knitting machines, each with 30 sections, will be installed.

Palmetto Full-Fashioned Hosiery Mill, Saluda, S. C., has begun construction of finishing plant which is estimated to cost $35,000. Plant is expected to be in operation by Jan. 1. Mill is being expanded to include four additional machines, installation of which is expected to get under way soon. Current expansion program involves total of about $250,000.

Phenix City, Ala. — A. Josephs and H. Josephs, of Chicago, Ill., will operate full-fashioned hosiery mill here. About 10 machines will be installed in late fall in building owned by estate of Roy E. Martin.

Piedmont Knitting Co., Gordonsville, Va., will begin installation of air conditioning in near future. Mill is receiving first of new group of 60-gage machines this month, which will be in operation early next month.

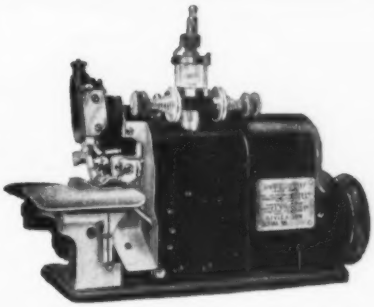
Ray Hosiery Mills, Philadelphia, Pa., suspended operations recently. Machinery is being sold and stock liquidated.

Richmond Hosiery, Ltd., Clinton, Ont., has been purchased by John S. Parker, London, Ont., from owners who have head office at London, Ont. He will continue to operate same as full-fashioned hosiery mill. All circular-type knitting machines are to be removed to mill of Richmond Hosiery, Ltd., at Mitchell, Ont.

Run-Pruf Hosiery Mills, Inc., Union, S. C., recently organized, is completing installation of equipment and will specialize in manufacture of women's runproof hosiery. Jerome Schwartz is president.

Stroudsburg Hosiery Mills, Inc., manufacturers of 54-gage, 15-den. stockings has moved to new building on Route 611, Stroudsburg, Pa. Mill plans to enter production of 66-gage stockings soon.

Tennessee Knitting Mills, Inc., Columbia, Tenn., has



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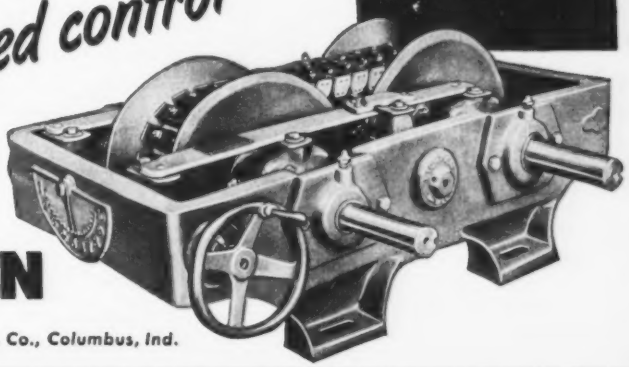

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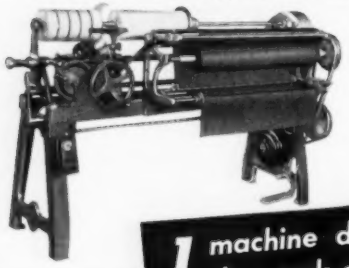

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NEWS ABOUT *Mills* (Continued)

completed four-year postwar modernization and expansion program which included air-conditioning and installation of large amount of new equipment.

Wildman & Schwartz, Inc., Norristown, Pa., has erected modern finishing plant adjacent to present knitting mill. New plant is on one-floor, covering 6,000 sq. ft., and will house inspection facilities and offices. Transfer of some departments from knitting plant provides space for new 54- and 66-gage hosiery production.

Dyeing- and Finishing-Plant News

Aberfoyle Mfg. Co., of Canada, Ltd., Guelph, Ont., makers of mercerized yarns, has let contract for building of one-story addition 80x42 ft., at estimated cost of $15,000. It will be of concrete-block construction.

Arctic Dye House, West Warwick, R. I., has filed notice of organization to operate dye works. Arthur L. Willette is head.

Colonial Mills, Inc., Clarksville, Va., has awarded contract to C. M. Guest & Sons, Greensboro, N. C., for general improvements and additions to finishing plant.

Cone Finishing Co., Print Works Plant, Greensboro, N. C., has set for completion this year five-year program for expansion and modernization. Program has been underway for nearly five years; and about 25,000 sq. ft. of warehousing space has been converted to manufacturing, laboratory, machine, and open stock space. Additional 10,000 sq. ft. of manufacturing space is now being completed.

Cranston Print Works, Asheville, N. C., will begin operations in new Brickton plant in near future. John Gregory, Cranston, R. I., has been named resident manager of plant. Four printing machines are expected to be in operation by October with some 80 persons employed. Eventually, plant will employ 400 persons in bleaching, dyeing, and printing of cotton materials.

Dyemaster Hosiery Finishing Corp. is new firm which will begin operations in New York in near future. Latest types of preboarding, dyeing, postboarding, and general equipment is now being installed in new single-story plant which occupies approximately 7,500 sq. ft. Plant has been especially designed with latest engineering facilities and equipment for streamlined flow and minimum handling of goods.

Franklin Process Co., Philadelphia, Pa., has let contract to Robert E. Lamb & Son, Inc., Philadelphia, for alteration and improvement in plant. Cost is reported close to $75,000. Jenks & Ballou, Providence, R. I., are architects.

Grace Bleachery of Springs Cotton Mills, Grace, S. C., has let contracts for additional machinery to increase capacity. Company will install one additional bleaching range, one mercerizing range, one dry-can range with mangle and winder, one Sanforized finishing range, and one general finishing range which will increase capacity about 33%. Company has lately completed storage warehouse with 120,000 sq. ft. of floor space for bleachery. This plant is one of most modern in country, having been completed in 1948 at cost of $15,000,000.

Louisville Textiles, Inc., Louisville, Ky., is completing new package dyehouse located at plant. Project is from plans and under supervision of Lockwood Greene Engineers, Inc., Spartanburg, S. C. Engineers are carrying out other miscellaneous improvements on water, steam, and electrical system in plant.

Manville Dyeing & Finishing Co., Lincoln, R. I., has been chartered with incorporators consisting of Francis Conlan and H. Eliot Rice, West Warwick, R. I., and James C. Bulman, East Greenwich, R. I., for purpose of processing, woolen, worsted, and other yarns.

U. S. Finishing Co., Norwich, Conn., is moving Queen Dyeing Co. from Providence, R. I., to Norwich. More employment in that area will result.

Valley Dyeing & Finishing Co., Ltd., Valleyfield, Que., is having repairs costing $12,000 made to mill.

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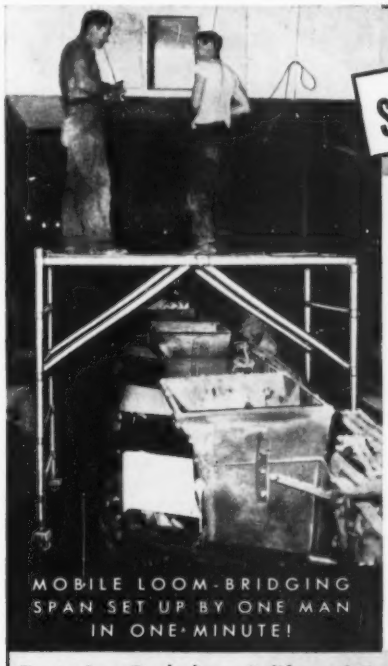

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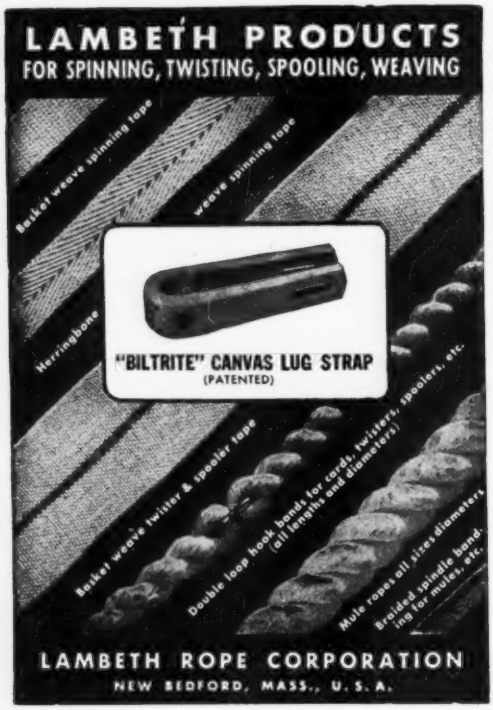
American Yarn & Processing Company

Mount Holly North Carolina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Weave spinning tape
Herringbone
"BILTRITE" CANVAS LUG STRAP
(PATENTED)
Basket weave twister & spooler tape
Double loop hook bands for cards, twisters, spoolers, etc. (all lengths and diameters)
Mule ropes all sizes diameters
Braided spindle bands for mules, etc.
LAMBETH ROPE CORPORATION
NEW BEDFORD, MASS., U. S. A.

NEWS ABOUT Men

W. J. Aldridge has been promoted from treasurer to vice president of Mandeville Mills, Carrollton, Ga.

Marion W. Beacham has become superintendent of Deering Milliken plant of Excelsior Mills, Union, S. C., succeeding **Boyd P. Chapman, Jr.**

Bert I. Bertelsen, former assistant to Fred W. Noechel at Botany Mills, Inc., physical-testing laboratory, has been made chief of the department. He joined the firm as a weaver 10 years ago.

E. W. Borden has become overseer of finishing at Duro Finishing Corp., Fall River, Mass.

E. M. Bost, formerly superintendent of Durham, N. C., plant of Erwin Cotton Mills, and associated with company for 17 years, has become superintendent of Lane Cotton Mills, New Orleans, La.

Louis M. Boulware has been named manager of Fisk Cord Mills of U. S. Rubber Co., New Bedford, Mass., to succeed **Frank L. Burns,** retired.

B. M. Bowen has retired as superintendent of Salisbury Cotton Mills, Salisbury, N. C.

J. M. Christian has been made manager of West Texas Woolen Mills, Eldorado, Tex.

Richard D. Cleaves, former head of SCAP Textile division in Tokyo, Japan, is returning to Japan this month to establish his own textile business there. **Bertram Schwartz,** formerly one of his assistants at SCAP, will be associated with him.

John C. Cone has been appointed production manager and superintendent of Hartford Woolen Co., Inc., Hartford, Vt., to succeed **George Chappell.**

Horace Doan has been appointed superintendent of American Processing Plant of American Yarn & Processing Co., Mount Holly, N. C., where he has been chief chemist since 1939, succeeding **Fowler Jackson.**

James M. Flack, industrial-relations manager of Textron, Inc., has been named general manager of Textron Puerto Rico and will establish office at Ponce, Puerto Rico, succeeding **Frederick A. Celler,** resigned.

Harry W. Flynn, general manager of Burlington, N. C., plant of Celanese Lanese Corp, has resigned. **Murray Davidson, Jr.,** superintendent, is now acting general manager.

Eugene E. Ford has been elected secretary of Industrial Rayon Corp., Cleveland, Ohio, to succeed **Frederick L. Bissinger,** resigned. Mr. Bissinger continues as vice president.

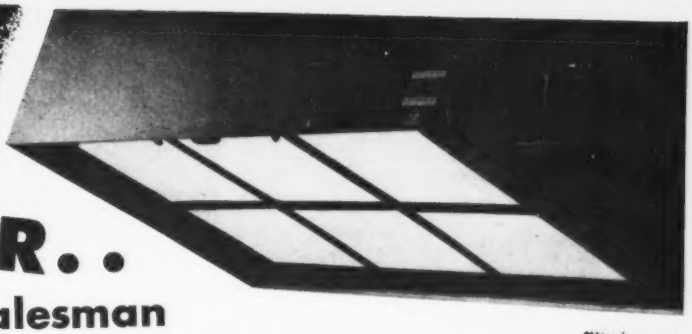
William F. Gates will become manager of Firestone Tire & Rubber Co. new textile plant at Buenos Aires, Argentina, when it begins operations late this year.

W. M. Harris has been named controller of Aragon Mill division of A. D. Juilliard & Co., Inc., Aragon, Ga. Mr. Harris was formerly with Floyd Mill of company, Rome, Ga.

George W. Haywood has resigned as president of New

25 Years of Service

EDWIN D. FOWLE, publisher of TEXTILE WORLD since 1942, observes this month the completion of 25 years of service to this publication and to the textile industry. A graduate of Lowell Textile Institute in 1924, he shortly thereafter joined the staff of TEXTILE WORLD in Boston. Mr. Fowle was the proponent of the S and Z terminology for yarn twists and of the Typp system for yarn numbering. He served in both the editorial and business departments of TEXTILE WORLD before he was appointed publisher.



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Today color is the greatest single factor in textile merchandising. It is color that sells your fabrics, that catches the consumer's eye.

With Macbeth Color Matching Skylights you can match your colors under the standard color matching light source of the industry—available at the turn of a switch 24 hours a day, no matter what the weather.

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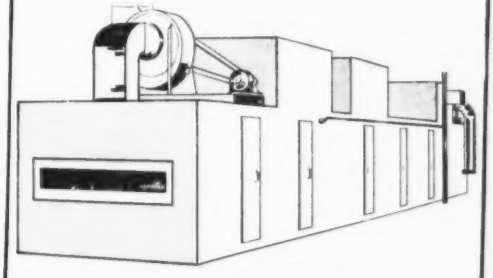

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SERIES G BEAMS

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– additional strength. – stands stress of yarn better
– truest running. – withstands rougher handling.

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With Improved Cast-iron Inside Supports at ends, and three two-ply wood supports between.

ALSO –

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With five Improved Cast-iron Inside Supports as shown.

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with Improved Cast-iron Inside Supports at ends, and seven two-ply wood supports between.

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THOMAS C. ASSHETON CO. • 11 WEST FORTY-SECOND STREET • NEW YORK 18, N. Y.

NEWS ABOUT Men

(Continued)

Bedford Cordages Co., New Bedford, Mass. He will be succeeded by **Martin Walter, Jr.**, former vice president.

Luther H. Hodges, vice president of Marshall Field & Co., Inc., and general manager of the Fielderest Div., Spray, N. C., was recently feted at a luncheon on the anniversary of his 30th year with the company.

Fowler Jackson, who has been assistant superintendent of processing at American Yarn & Processing Co., Mount Holly, N. C., has been appointed sales representative for Laurel Soap Mfg. Co., Philadelphia, and will establish headquarters in Atlanta, Ga.

W. L. Jackson has succeeded **Fred T. Broyhill** as superintendent of Royal Cotton Mill Co., Wake Forest, N. C. He was formerly superintendent of Hawthorne plant of American Thread Co., Clover, S. C.

Frank W. Jeffers, who became associated six years ago with Lorraine Mfg. Co., Pawtucket, R. I., as assistant to Norman A. MacColl, president, has resigned.

John Latàem, formerly with Seminole Mills, Clearwater, S. C., has been appointed superintendent of Aragon (Ga.) Mills Div., A. D. Julliard & Co., Inc., succeeding **C. A. Townes,** resigned.

W. L. Lynch, Bowling Green, S. C., has become superintendent of Superior Yarn Mills, East Monro, N. C.

Anthony P. Martone has been appointed vice president in charge of production and research for New Era Dyeing and Finishing Co., Fair Lawn, N. J. He was formerly with New Process Dyeing & Finishing Co., Paterson, N. J., as superintendent and general manager.

Charles M. Mason, who has held position as superintendent of machinery maintenance in various units of Bibb Mfg. Co., has resigned to become associated with Sykes, Inc., Charlotte, N. C., as assistant to president.

Carl C. Mattman, formerly of Textron, Inc., has become associated with Stonecutter Mills Corp. Spindale, N. C., as director of fabric development.

William McDonald has become superintendent of yarns at Farnsworth Co., Lisbon Center, Me.

James B. McKinstry, who resigned recently as superintendent at Neponset Woolen Mills, Canton, Mass., has become manager of Lincoln Mill, Pascoag, R. I., succeeding **J. Barker.**

Marshall McManus has been appointed superintendent of Oxford Cotton Mills, Oxford, N. C., to succeed **D. F. Lanier,** retired.

Albert Messer has become manager of New Process Dye & Finish Co., Fair Lawn, N. J.

F. A. Miller has become superintendent of Duofold, Inc., Mohawk, N. Y., succeeding **F. B. Booth.**

Robert A. Morgan, formerly official of Morgan Mills, Rome, Ga., has become general manager of Gold-Tex Fabrics Corp., Rock Hill, S. C.

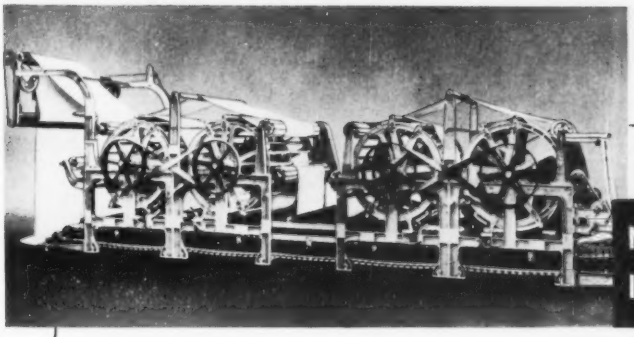
Robert Napier has been named manager of yarn division of William Whitman Co., Inc., Lawrence, Mass., succeeding **Kenneth Merrill,** vice president, resigned. Mr. Napier has been with company more than 20 years.

Robert Pharr has assumed new duties as assistant superintendent of Mandeville Mills, Carrollton, Ga. He was formerly with Dwight Mfg. Co., Alabama City, Ala.

George N. Proulx has become assistant superintendent of Beacon Mfg. Co., Swannanoa, N. C.

C. H. Puesey has been promoted to superintendent of Utah Woolen Mill, Salt Lake City, Utah.

Henry Rawson, former divisional superintendent of Rock Hill Printing & Finishing Co., Rock Hill, S. C., has resigned to accept position as superintendent of printing at Uncas Printing & Finishing Co., Putnam, Conn.



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The New Gessner 16 Contact Double Cylinder Tandem Slat Gig Unit

Cut the gigging time on your broadcloths, kerseys, face finished goods, and save floor space, too. You can run four to six pieces at one time on this Gessner Gigging Unit and by looping the goods to return, obtain the equivalent of eight runs over a single cylinder.

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MODEL 31

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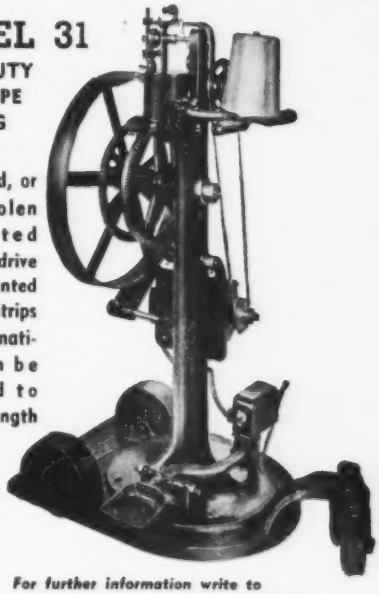

for piece-end, or tacking woolen and worsted cloth. Motordrive—motor mounted on column, Strips cloth automatically. Can be equipped to make any length of stitch from ⅜" long down to 7 stitches per inch.

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for use in shrinking fabrics to the *"Sanforized"* standard by the Compressive Shrinkage process, are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the heaviest denim, there is a special Huyck blanket to meet your specific needs.

Huyck blankets retain high shrinkage and finish properties to the last.

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KENWOOD MILLS
Rensselaer, N. Y.

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18 clear, easily distinguished colors.
Both large and small stick crayons.

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Sandusky, Ohio
NEW YORK · SAN FRANCISCO · DALLAS

NEWS ABOUT *Men*

C. G. Reecer is superintendent of new Norris Hosiery Mills, Murfreesboro, Tenn.

Wallace P. Reynolds is associated with Renfrew Woolen Mills, Renfrew, Ont., and not with Hartley Woolen Mills, as was reported in August.

James Riddle has been appointed superintendent of rayon division of North Carolina Finishing Co., Salisbury, N. C. He was formerly assistant to **James M. Myers**, who continues as superintendent of cotton division.

A. E. Ritchie has become superintendent of Burson Knitting Co., Rockford, Ill.

John Rollins, formerly of Charlotte, N. C., has become superintendent of Gold-Tex Fabrics Corp., Rock Hill, S. C.

Albert Russell, second hand of weaving at Fulton Mills, Fulton, N. Y., under **Elwood Ward**, retired, is now in charge of weave room.

Harvey M. Scherr has recently been appointed assistant superintendent of Textron Southern, Inc., rayon weaving plant, Hartwell, Ga. Mr. Scherr was Textron representative during construction of new plant.

William Schuman has become overseer of dyeing at Hart & Foster Co., Philadelphia, Pa.

Benjamin K. Sharp has become superintendent of Milledgeville Mills, Milledgeville, Ga.

Carl Stezer has entered upon his new duties as master mechanic for Nelson and Spun Fibers plants of American Yarn & Processing Co., Whitnel, N. C.

J. G. Shedd has resigned as manager of Ottaray plant of Monarch Mills, Union, S. C., to become general manager of Lane Cotton Mills Co., New Orleans, La.

Charles W. Taylor has resigned as general superintendent of American Thread Co., Hampton Yarn Div., Easthampton, Mass., to accept position as manager at Kilburn Mills, New Bedford, Mass. Mr. Taylor was formerly with Renfrew Mfg. Co., Adams, Mass., as chief dyer and later became superintendent of Hampton Co.

G. M. Taylor, formerly with Woodside Mills, Simpsonville, S. C., has become overseer of carding and spinning at Aragon-Baldwin Mills, Rock Hill, S. C.

Arthur S. Thomas is now general manager and superintendent of Spatex Corp., Charlotte, N. C. He was formerly vice president and purchasing agent for Monticello Cotton Mills, Inc., Monticello, Ark.

R. E. Tremblay has resigned as superintendent of Abdon Textiles, Inc., Fall River, Mass., and has been succeeded by **John Gassman**.

Raymond Tucker, overseer of knitting at Utica Knitting Co., Utica, N. Y., has been promoted to superintendent.

Dr. Martin Wadewitz and **Dr. John Bitter**, formerly with North American Rayon Corp., have joined American Enka Corp., Enka, N. C., as technical director and director of research, respectively.

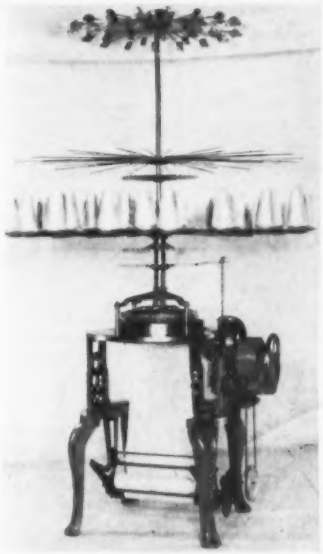
George W. Williams has been named manager of Dallas plant of Fulton Bag & Cotton Mills, Atlanta, Ga., succeeding the late Adolph Mayar.

OBITUARY

Nathan W. Bales, 60, president and treasurer of Bales Hosiery Corp., High Point, N. C., died recently.

Francis H. Eldridge, 44, president of F. C. Huyck & Sons, Albany, N. Y., died in August. A graduate of Harvard in 1928, he was secretary to the president, E. N. Huyck, until 1932, when he became credit manager. In 1937 he became assistant treasurer, and two years later was vice president and general manager. He had been president since 1946.

Arthur C. Freeman, Sr., 83, president of Exeter Mfg. Co., Exeter, N. H., died in August. Formerly president of H. W.



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Over a century of continuous service to the knitting industry throughout the world

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A 3rd Generation of "LANES"

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DESIGNING and MANUFACTURING

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And still to the same basic credo of Quality, Precision and Craftsmanship.

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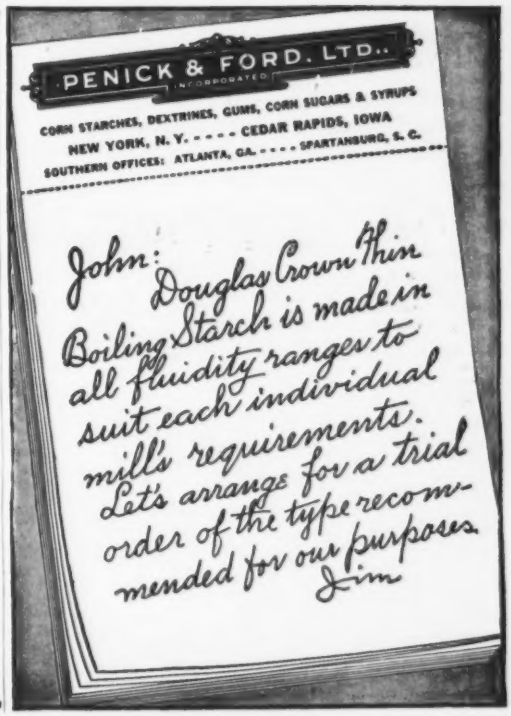
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Self-oiling and no grease can drop on the floor. Used for all kinds of fine yarns, wet or dry.
Bottoms finished 1¾". Sides and ends finished 1¼", 1½", 1" or ⅜", whichever desired. Made from maple, poplar, cypress or fir lumber.
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For use on rayon, cotton and woolen material.
Dye-resistant and boil-proof, permanent, inexpensive, quick and easy to use.
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WORK LOAD STUDIES
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SPECIAL REPORTS
COST REDUCTION SURVEYS

NEWS ABOUT *Men*

LOUIS HEILBRONNER, 82, chairman of the board of Holeproof Hosiery Co., Milwaukee, Wisc., died in August. He had been associated with the firm for 67 years, starting at Kalamazoo Knitting Works as a stocking presser. In 1895 he became a salesman, in 1907 a yarn buyer, and later factory manager. In 1933 he became president, in which position he served until he became chairman in 1945.

Butterworth & Sons Co., he retired in 1933.

Alphonso L. Ivey, 65, president and general counsel of Virginia-Carolina Chemical Corp., died recently. He had been connected with the firm for more than 30 years and had been president since 1937.

Edmond Lefebvre, 65, one of the owners of the Branch River Wool Combing Co., Woonsocket, R. I., and owner of Prouvost, Lefebvre & Co., Inc., Woonsocket, died recently at Roubaix (Nord), France.

Theodore F. Thieme, 92, founder of Wayne Knitting Mills, Fort Wayne, Ind., died in August. He was known as a pioneer in full-fashioned hosiery manufacturing.

Harold A. Braman, 62, former vice president, treasurer, and resident director of A. D. Juilliard & Co., Inc., New York, died recently. He was with the Juilliard firm from 1909 to 1930.

William Deacon, Jr., 65, vice president of W. S. Libbey Co., Lewiston, Me., died in August. For years he served the American Woolen Co. at various New England mills. He became vice president and plant manager of the Libbey Mill in 1928.

Flavius C. Maddox, 52, vice president in charge of sales at Norwich Knitting Co., Plainfield, N. J., died in August.

Parry C. Wiggin, 88, former vice president and comptroller of American Woolen Co., Brookline, Mass., died in August. He had been with American Woolen 30 years upon retiring in 1931.

Frank D. Cowdery, secretary of Albany Felt Co., Albany, N. Y., since 1920, died in August after a long illness.

Hugh N. Dyer, 75, former secretary-treasurer of Martinsville Cotton Mill, Martinsville, Va., who was named president of the mill following the death of R. L. Walker, died in August.

William D. Fleming, 59, manager of the Toronto sales division of Dominion Textile Co. Ltd., died recently. He entered the textile industry at the age of 15.

Francis S. Nettleton, 69, former general superintendent of Hockanum Mills, Rockville, Conn., died in August. A native of Leeds, England, he graduated from Philadelphia Textile Institute in 1901.

Paul D. Petterson, assistant professor in the engineering department at Lowell Textile Institute, died recently. A member of the school faculty for 20 years, he was an authority on textile machine tools.

Charles B. Sessoms, Jr., secretary-treasurer of Mansfield Mills, Lumberton, N. C., died recently.

Leo P. Heneghan, 59, purchasing agent for Fulton Bag & Cotton Mills, Atlanta, Ga., died recently in St. Louis, Mo.

Karl T. Nessler, 52, wool and chemicals purchasing agent of Seymour Woolen Mills, Seymour, Ind., died in August. He had been connected with the firm for 15 years.

Wister W. Hancock, 62, master mechanic at Darlington Mfg. Co., Darlington, S. C., died in August.

John Piacitelli, 62, a dyer at Glenlyon Print Works for 36 years, died recently.

Two Great Models for

TESTING MOISTURE CONTENT

in wool, cotton and rayon

← **MODEL PD-1** for textiles in loose or compressible forms

MODEL K-2 → for textiles in cones, rolls and similar forms

Quick, Accurate Readings

In less than 3 seconds you can test moisture content of practically all types of textile materials, including cotton, wool, rayon and nylon in fabrics, packages and loose forms.

This portable instrument is designed for "on the spot" checks in your plant. Moisture Register is easy to operate—requires no technical knowledge or complicated figuring. Cost is negligible in comparison to advantages. Write today for complete details. Specify type of material to be tested.

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ELECTRONIC MOISTURE REGISTER

The standard in moisture testing

TENTERING and DRYING MACHINERY

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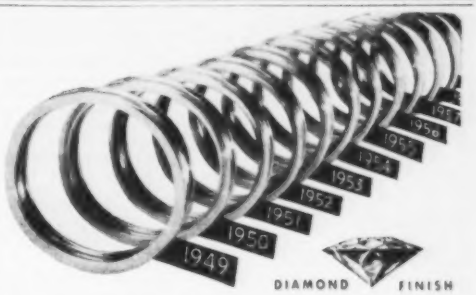
Westbrook, Maine

Cotton yarns, single and ply
Cotton warps, single and ply
Colored yarns and warps
Spun rayon—yarns and warps



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QUALITY proves itself

The way you can be sure of maximum ring life in the future, is to use rings that have given it in the past. DIAMOND FINISH have a 76-year reputation for long life and trouble-free operation. They offer you old-time dependability, plus ultra-modern lubricated styles exclusive with us.

WHITINSVILLE (MASS.) SPINNING RING CO.

Makers of Spinning and Twister Rings since 1873

DIAMOND FINISH

ALL STEEL **ECONOMY BALING PRESSES**

ALL SIZES FOR ALL PURPOSES

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An advertising inch is measured ⅞" vertically on one column, 3 columns—30 inches—to a page.
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NEW ADVERTISEMENTS received by October 14th will appear in the November issue subject to limitations of space available.

MEN WANTED

POSITIONS OPEN

We can place: GENERAL MANAGER several rayon cloth mills, very attractive position for right man; woolen mill superintendent $10,000-$12,000 year; manager, superintendent, foremen and fixers tricot fabrics; asst. supt. worsted scouring, carding and combing plant; asst. supt. sweater mill; office man preferably with mill experience for woolen yarn mill.

OVERSEERS FOR FOLLOWING DEPTS: rayon weaving; cutting infants' and childrens' underwear; woolen weaving; knitting for state prison; dry finishing worsted dress goods; cotton yarn dyeing; sewing room familiar with knitted or woven tricot fabrics and another for underwear; woolen carding 1st, 2nd and 3rd shifts; cotton carding; cotton winding; shoddy carding; worsted dressing and slashing; woolen carding and spinning combined; full fashioned hosiery dyeing, woolen and worsted finishing; cotton weaving and slashing; dyeing and washing knit goods, rayon-cotton piece goods dyeing; night foreman Raschel machines.

SECOND HANDS FOLLOWING DEPTS: woolen carding; worsted piece dyeing; woolen finishing; cotton piece goods dyeing; woolen piece dyeing.

ANALYTICAL CHEMIST; microscopist; foreman-head mechanic sweater mill; rayon-cotton loom fixers; velvet carpet loom fixer; sewing machine fixer, $350 month; mechanic-machinist to repair garnetts, pickers, looms; fixer Scott & Williams and Wildman interlock machines; cotton picker man; garnett mechanic.

CHARLES P. RAYMOND SERVICE
Incorporated
Over Fifty Years in Business
294 Washington St., Boston 8, Mass.
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Sales Representation
WANTED

Sales Representatives or Manufacturers Agents established in the Textile Industry wanted in New England States, Dominion of Canada and Middle Western States for well established line of Twist Setters, Conditioners and Dryers. *Write*

LYDON BROTHERS, INC.
85 Zabriskie St., Hackensack, N. J.

WANTED
KNITTING MILL SUPERINTENDENT

Experienced in manufacture of knitted fabrics made on Brinton and Crane knitting machines, from yarn to finishing. Large New England Mill.

P-9968, Textile World
330 W. 42nd St., New York 18, N. Y.

COMBED YARN MILL SUPT.
WANTED

College Man Around 35 Preferred. Must know efficiencies, job loads, etc. North Carolina.

P-9337, Textile World
330 W 42 St., New York 18, N. Y.

SALESMAN WANTED

Chemical Company wants a Top-Notch salesman with thorough knowledge of the Weaving and Throwing of Rayon and Acetate and Silk Fabrics. To solicit business on Sizing and Throwing Compounds. Preferably man with Chemical Background.

SW-9519, Textile World
330 West 42nd Street, New York 18, N. Y.

Sales Representation
WANTED

Expanding company requires engineering sales representation in Southeastern states on fabric coating systems, tenter driers, hot air slashers, web handling machinery and similar equipment. Advantageous contract and full cooperation offered right organization. Give full particulars.

RW-9500, Textile World
330 West 42nd Street, New York 18, N. Y.

WANTED
Assistant to Gen. Mgr.

Chain of Combed Yarn Mills. Wonderful Opportunity. Must have practical experience. College man around 35 preferred.

P-9859, Textile World
330 W. 42nd Street, New York 18, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St., (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITION VACANT

WANTED BY Manufacturing concern in N. Y. Metropolitan area: Chemist for research and development of products for textile processing and finishing. Work is mainly in laboratory with some field service. Thorough knowledge of textile processes required. State age, education and qualifications. Reply P-9834, Textile World.

POSITIONS WANTED

TEXTILE SCHOOL graduate, 20 years experience as foreman and superintendent in silk, rayon and cotton wishes position in Phila. or vicinity. PW-8067, Textile World.

FOREMAN, TRICOT Mechanic wishes to change. New York City area or Penna. Well experienced on all types high speed Tricot Machines. Make own patterns. PW-9852, Textile World.

OVERSEER OR Head Fixer of Knitting Room. 23 yrs. experience, 8 yrs. mechanical development in large Textile mill. Thoroughly familiar with all equipment of hosiery, underwear, knitting and sewing machines. PW-9456, Textile World.

TEXTILE CHEMIST, 28, Dyeing and finishing of cotton, rayon, nylon. Lab. and production. Will relocate. PW-9957, Textile World.

Professional Services

LANCASTER, ALLWINE & ROMMEL
Registered Patent Attorneys

Patent Practice before U. S. Patent Office, Validity and Infringement Investigations and Opinions. Booklet and form "Evidence of Conception" forwarded upon request.

Suite 448, 815 15th St., N. W., Washington 5, D. C.

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Completely new modern plant in Virginia has opening for a dyer experienced on viscose and acetate piece goods. State age, qualifications and salary expected.

PW-9789, Textile World
330 W. 42nd Street, New York 18, N. Y.

MILL MANAGER
WANTS POSITION WITH PROGRESSIVE FIRM

Good Background. Best of Reference.
Years of successful experience in the Manufacturing of Filament and Spun Synthetic Fabrics.
Specialist in Fancy Fabrics from Designing To Economic Production.

PW-9772, Textile World
330 W. 42nd Street, New York 18, N. Y.

CHEMIST

Female chemist open for position in rayon or in textile mill or other chemical laboratory. Can furnish references on two years present work in research laboratory of large rayon manufacturer. Knowledge of textiles. College graduate. Single. Willing to go anywhere. Address:

PW-9929, Textile World
330 W. 42nd Street, New York 18, N. Y.

POSITIONS WANTED

MILL TECHNICIAN, College graduate with several years' experience in cotton and rayon weaving, laboratory and spinning seeks position in weaving mill. PW-9662, Textile World.

SELLING OPPORTUNITY WANTED

DO YOU have greige or finished goods which needs merchandising thru an excellent agent or converter? Many years experience converting and selling to dress, blouse, underwear, coat and retail trade. Many connections with converters who may be able to use your product. Particularly interested in novelty or staple fabrics in various weaves. RA-9235, Textile World.

BUSINESS OPPORTUNITY

Wanted: An Organization
that can give service in styling of fabrics for a Jacquard plush mill, bringing out new designs, creating new fabrics of all types for the upholstery trade. BO-9328, Textile World.

Old Established Manufacturer
and national distributor of textile and paper mill specialties interested in purchase of small chemical plant supplying these industries whose owners wish to sell their business or affiliate with larger company. Write full particulars to BO-9889, Textile World stating especially nature of products manufactured, scale of operation, number of personnel, scope of selling operation. All replies held in strictest confidence. If you prefer you may have your counsel first approach us.

FOR SALE

For Sale by large textile bag
company—2 Dundee Calenders with 3 Steam Rollers, Width of Rollers, 90". Complete with Roll Stands and 2 Rewinds. FS-9939, Textile World.

WANTED

Large engineering firm wishes to acquire several complete textile plants through purchase of (1) capitol stock, (2) assets, (3) machinery and equipment, whole or in part. Personnel retained where possible, strictest confidence.

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It was Edmund Cartwright, a minister, a poet, and a complete stranger to the textile industry, who had never even seen a loom at work, who first worked out a practical plan for power weaving! He did what had seemed impossible—made a loom which automatically stopped on the breaking of a thread. If it seems impossible for you to get the textile machinery you want—try ◄MLC►.

1—58" James Barrett 4-color Printing Machine
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3—52" Werner S/S lined Dye Jiggers
4—45" two and three roll Padders
1—76" 3-roll Padder
1—36" Chenille Cutting Machine with Blower and Dust Collector
5—C&M Reversible Flock Cutters
1—60" Furbush Card Grinder

EQUIPMENT FOR JUTE AND HARD FIBRES CARDING, DRAWING FRAMES, ROVING FRAMES WINDERS, ETC. *Send for complete list.*

38—Loom Mill 54" and 56" wide Draper Automatics, with Universal #90 Winders and Supplies
58—46½" Draper Model X Looms
120—54" C&K 2x1 Automatic Silk Looms
35—56" C&K S-3, 2x1 Automatic Shuttle Changing Looms, 20 and 24 harness

26—72" C&K C-4, 1949 Model Automatic Convertible Looms, 20 harness intermediate head motions, motorized.
12—82" C&K 4x1 Automatic 25 harness Looms, motor driven.

2—40" H&B (1926) Single Process Pickers, 3 Beaters
1—40" D&B Picker with feed apron, automatic feeder, 2 porcupine beaters, eveners, etc.
1—Kitson Hopper Feeder with extended apron with D&B Vertical Opener
1—42" Phila. Textile Mixing Picker
1—80" S&F Iron Cone Duster with condenser
1—Buffalo Size 4½ Conoidal Fan with motor and unit heaters

2—Foster Skein to Cone Winders with Waxing attachments, 1—40 sp.; 1—80 sp.
1—94 sp. Foster Model 101 Cardboard Coner
5—140 sp. Barber Colman Model KK 1926 Automatic Spooler, motor driven
3—Barber Colman 1926 High Speed Warpers with 432 end creels
1—Barber Colman 5E Stationary Type Warp Tying-in Machine
1—40 sp. Barber Colman Tailing Machine, motor driven

14—82" C&K 2x1 Automatic 8 harness Cam Looms, motor driven
8—100" C&K 2x2 Automatic 25 harness Looms, with Baker 3-mix attachments

12—276 sp. S-L 1949 Model 38, 1¾" R, 3½" Ga. Long Draft Spinners, motor driven
10—264 sp. S-L 1947 Model 38, 2½" R, 3½" Ga. Long Draft Spinners, motor driven
4—180 sp. Draper 2¼" R, 3½" Ga. Wet Twisters
1—144 sp. Whitin 3" R, 4½" Ga. Wet Twister

1—60" Butterworth Clip Tenter Frame, brass top opening clips
1—Proctor & Schwartz Roller Type Dryer
2—47" 2-roll Starch Padder (Batchers with Cut-off)
1—60" V. Vl. 4-roll Hydraulic Silk and Rayon Calender
1 set 44' 109" copper dry cans

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3¾" Fibre head 2" Bar
5" Traverse ¼" Fibre

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20—5" Gauge—100 Spindles Each.
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Individually motorized 3 phase, 220 volts, 60 cycles—some single 2" Feed Rolls, Double 2" Rolls. All machines excellent shape. Bobbin Equip. if desired.

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1 Hercules Extractor 54"
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1 Butterworth T.F. 80'
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2 Tubers
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1 60" Perkins Batcher

LOOMS
30 Draper Looms 47½" R. S.
12 Draper Looms 55" R. S.
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22 C & K 4x4 72" R. S.
1 C & K 4x1 Automatic 56" R. S.
12 Staffords 2x1 53" R. S.
20 C & K 4x1 56" R. S.
8 C & K 4x4 54" R. S.
5 C & K 2x1 64" R. S.

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1 Foster Cone Winder 80 Spindles
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Saco Lowell Weigh Boxes
Hall & Stell Intermediates
Whitin Finishers
1 Proctor Raw Stock Dryer
5 Prince & Smith Cap Twisters
3 Easton & Burnham Spool Winders 100 Spindles each
6 Lowell & Prince & Smith Draw Frames
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3 #50 Universals
20 #90 Universals
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8 Sipp Winders
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We have in stock G. E. & Westinghouse Loom Motors from ⅓ H.P. to 1½ H.P.
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WEAVING SUPPLIES
250,000—Flat Steel Heddles, 14"
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1—92" Davis & Furber Pinless Reel—Complete. Universal Magazine Creel—1200 Live Ends

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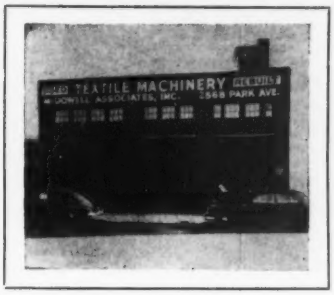

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1 AGER 60", Capacity approximately 150 yards.
1 BATCHING AND SEWING UNIT, MERROW 60D3B head, 60" mtrzd.
1 BATCHER 2 roll, 60".
1 UP AND DOWN WET BRUSH, 66" on Bristles.
1 VERTICAL BRUSH, 6 roll, 68".
1 BRUSH with STEAMER, 2 roll, 66", mtrzd.
1 BRUSH AND SANDING UNIT, 4 roll, 66".
1 CALENDER, 3 roll, 50" Screw and Lever.
1 CALENDER, 5 roll, 50" Lever Pressure.
1 CALENDER, HYDRAULIC, 3 roll, 60" mtrzd.
1 CALENDER, 3 roll, 60" mtrzd.
1 COTTAGE STEAMER, 15' x 36" diameter, insulated.
1 CRAB, 4 bowl, 70" wide, squeeze rolls, vacuum slot, pump, motors, extra bowls included, etc.
1 CRAB, 72", 2 SS bowls.
1 CARBONIZING CLOTH DRYER, 70", with acid tank, motor and drives.
1 SEMI-DECATUR, 72", Nash pump, blanket and motors.
1 FULL DECATUR, 72" pump, cooling rack.
1 DEWING MACHINE, 66", copper feed tank, drain trough, rotary pump, mtrzd.
4 DOUBLING, WINDING and MEASURING MACHINES, 50", 60", 72", 80".
1 SET 7 DRY CANS, 50" SS.
1 LOOP DRYER, 84", heaters, fans, housing, mtrzd.
1 DRYER RAW STOCK, 3 section, 27', mtrzd.
1 PIN TENTER DRYER, 78", fans, housing, motors, complete.
1 PIN TENTER DRYER, 84", fans, housing, motors, complete.
1 DRYER SKEIN CONTINUOUS, 108" width.
1 DYE KETTLE 6', SS, totally enclosed.
1 DYE KETTLE, 9', SS reel.
1 DYEING, PACKAGE, SS, 300#, automatic controls.
1 DYEING, SKEIN, 10 arm, SS, Cascade Type.
2 DYEING UNITS, SKEINS, 28-56 stick, SS lined tubs.
3 EXTRACTORS, 48", 72", 96", copper baskets, mtrzd.
3 FOLDERS, 1 yard, 40", 56", 60".
3 FULLING MILLS, double compartment.
2 INSPECTING MACHINES, 60", 100", forward and reverse motion.
14 JIGGS, 50", SS, tilting expanders, etc.
1 MEASURING ROLL, 72", swing folder, 60 yd. dial, mtrzd.
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1 MERCERIZING UNIT, CLOTH, 50" with caustic tanks, 60' x 60" tenter frame, 3 box washer, mtrzd.
1 MERCERIZING UNIT, SKEIN, 24 pole, 54"
2 NAPPERS, 72" S.A. 12-14 roll units, folder takeoff.
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2 NAPPERS, 60", 90" DA, 24 roll, folder takeoff.
2 NAPPERS, 90" DA, 36 roll, folder takeoff
3 POWER PERCHES, 72", roll, clocks, mtrzd.
2 POWER PERCHES, 66" table type, mtrzd.
1 PRINT MACHINE, 4 color, 66".
2 ROTARY STEAM PRESSES, 66" 68".
6 THREAD DRESSING UNITS 2 and 3 brush, 38".
1 REEVES #3 CLASS E, ENCLOSED DRIVE.
2 SCOURING UNITS, RAW STOCK, 5 bowl, 48", 54" with dryers.
1 SCOURING BOWL, 48" x 27' long, complete.
1 SKEIN SCOURING UNIT, 2 bowl, 300# capacity.
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1 SCUTCHER, 72" brass scroll rolls, mtrzd.
1 SEWING AND ROLLING UNIT, 56" goods with batcher, mtrzd.
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1 RAILWAY SEWING MACHINE, 50" MERROW HEAD, mtrzd.
1 SHEAR, 4 blade, BB 60" automatic seam-thru attachment, cloth rolling stand, mtrzd.
3 SHEARS, MODEL "B", double blade, 66½" with list saving rests.
2 SHEARS, MODEL "A", double blade, 66½" with list saving rests, mtrzd.
1 SHEARING, STEAMING AND BRUSHING UNIT, hooked in tandem, consisting of 2 steamers, 2 double blade 66½" Shears with list saving rests, single roll brush with folder.
1 HOT AIR SLASHER 92" width, double size box, 4 double rows, steam coils.
1 SLASHER 3 drum, 57" x 7' diameter, size box, mixing kettle, mtrzd.
2 SOAPERS, lead lined, 27" wide x 68" long with iron squeeze rolls.
1 SQUEEZE SET, 3 rubber rolls, 72" screw and lever set.
1 TENTER FRAME CLAMP 90' x 52" mtrzd.
1 TENTER FRAME CLAMP 70' x 60" mtrzd
1 TENTER FRAME, PIN, 60' x 72" mtrzd.
4 TUBING, WINDING & MEASURING MACHINES, 42", 45", 50", 60".
2 WASHERS ROPE, 6' log rolls, 18" dia.

CARDING AND SPINNING

80 M automatic 8¾" BOBBINS
1 BEAMER, high speed, accomodating up to 82" beams.
1 CARD CLOTHING TENSION MACHINE, 60".
4 WORSTED IRON CARDS, 2 cyl. 60" x 52".
5 WOOL IRON CARDS, 3 cyl. 60" x 60", Peraltas, Tape Condensers.
3 TAPE CONDENSERS, 48", ball bearing, 96 ends.
1 DX CREEL, Super-Structure Type, 360 ends.
1 CONE DUSTER, 80" with Condenser.
1 GARNETT, 3 cyl. Ball Bearing, 30 x 60.
8 MULES, GP, 360 spdls. ea., 2½" gauge.
8 MULES, GP, 320 spdls. ea., 3" gauge.
2 WOOL OPENERS, 48", double cylinders.
1 FEARNAUGHT IRON MIXING PICKER, 48 x 48, with new teeth in main cylinder.
1 RAG PICKER, 25", V Belt Pulley Drive.
3 WOOL SPINNING FRAMES, 132 spdls. ea., 4½" gauge, 3" ring.
1 ABBINGTON CARD STRIPPING SYSTEM, 1946 Model, 57 nozzles, complete.
1 TWISTER, 200 spdls., 2½" ring, tape drive.
1 TWISTER, 144 spdls., 3½" ring, mtrzd.
4 TWISTERS, 144 spdles. ea., 4" ring, mtrzd.
3 TWISTERS, 80 spdls. ea., 4" ring, mtrzd.
20 DOUBLE DECK TWISTERS, 200 spdls. ea., 4½" spac ng, mtrzd.
1 FOSTER #30 CONE AND TUBE WINDER, 100 spdls., mtrzd.
1 FOSTER #101 CONE WINDER, 100 spdls., mtrzd.
1 LAZENBY JR. 30 spdl. auto. COP WINDER, V Belt Pulley Drive.
4 WARPERS PIN TYPE, 9' 3" wide, reel, beamers, compressors, tracks.

WEAVING (LOOMS)

147 DRAPER "E" 32", 5 harness, belt driven.
189 DRAPER "E" 36", 2 harness, belt driven.
58 DRAPER "X" 39", 6 harness, mtrzd.
63 DRAPER "P" 40", belt driven.
100 DRAPER "E" 40", 2 harness, mtrzd.
72 DRAPER "K" 42", 6 harness, mtrzd.
28 DRAPER "K" 46", 25 harness, mtrzd.
52 DRAPER "E" 44", 2 harness, mtrzd.
150 DRAPER "XD" 50", mtrzd. 20 harness.
68 DRAPER "D" 81", 25 harness, mtrzd.
24 DRAPER "D" 86", 4 harness, mtrzd.
187 C&K 49" 4x1 auto. 25 harness, mtrzd.
12 C&K 52" 4x1 auto. 25 harness, mtrzd.
104 C&K S-5, 54" 2x1 auto. 20 harness, mtrzd.
35 C&K S-5, 56", 2x1 auto., gem head, mtrzd.
21 C&K 60", 4x1, mtrzd., auto.
12 C&K 64", 4x4, mtrzd., 25 harness.
60 C&K 72", 4x1 auto., 20 harness, mtrzd.
14 C&K 76", 4x4, 25 harness, mtrzd.
14 C&K 82", 4x1, auto., 25 harness, mtrzd.
12 C&K 82", 4x4, 25 harness, belt driven.
8 C&K 92", 4x1 auto., 25 harness, mtrzd.
14 C&K 92", 4x4, 30 harness, mtrzd.

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1—Kitson W3 Waste Machine
1—Whitin Bale Breaker, #4 w/feed hopper
4—Saco-Lowell Twisters, 3½" ga. 132 sp.
22—Whitin Combers, D-2, lap-11¾", Roth Aspirators
9—Atwood 5B Doublers, 84 sp, 8" ga, 3½" ri.
5—Saco-Lowell Drawing Frames, 6 del, 12" cans
2—Prince Smith Can Gill Boxes, 2" roller
16—Whitin Spinning Frames, 240 sp, 3¼" ga, Roth L.D.
7—Whitin Spinning Frames, 252 sp, 3¼" ga, Roth L.D.
7—Whitin Roller Cards, 48", 27" doffers
50—H&B Cards, 45", 26" doffers, 12" coiler
69—Whitin Spinning Frames, 3" ga, 240 sp.

SLASHING, WARPING & WINDING

5—Entwistle Hi-Speed Warpers, 54" filament
2—Cocker Magazine Creels, 450 ends
1—Saco-Lowell Slasher, 3 cyl, 84" width
2—Cohoes Slashers, 2 cyl. w/kettles & pumps
20—Universal #50 Winders, 6 sp, gear gainer
6—Universal #90 Winders, 20 sp, bunch builders
1—Sipp Eastwood Silk Warper, 83" wide, 1000 end cone creel
2—Foster #102 Winders, 100 sp, wooden cones

COMPLETE MILLS

Rayon Yarn Mfg. Mill—200,000 lbs. month
Rayon Throwing Plant
Full-Fashioned Hosiery Mill—45 gauge
Rayon Dyeing & Finishing Plant
Cotton Print Cloth Mill—22,000 sp, 600 looms
Cotton Yarn Mill—10,000 sp.
Cotton Printing Plant—2 print machine
Cotton Bleaching & Mercerizing Plant
Worsted Yarn Mill—3,360 spdls.
Duck Weaving Plant—8 looms
Knitting Mill, 63 knitters—rubbers & novelties
Worsted Weaving Plant—24 looms
Rayon Printing & Finishing Plant
Cotton Spinning Plant—4,716 sp, brand new

LOOMS

300—C&K S5, 56" with supplies
8—C&K W3 Looms, 82"
4—Whitin Tricot Machine, 28-14 ga.
200—Draper XD 50" auto, w/motor
60—C&K 72" R.S., 4x4 box 2 jacquard head
100—Draper K, 40", dobby head w/motor
56—C&K 72" R.S., 4x4 box, Staubli head
130—C&K C6, 54", 4x1, 25 harness
64—Draper XK, 49" R.S. w/motor
64—C&K 2x1, 52", non-auto, w/motor
24—C&K 4x4, 48" r.s. w/jacquard head
21—C&K C4, 80" 4x1 w/motor

DYEING & FINISHING

1—W&J Tenter Frame, 80'x50", 7 burn.
8—Copper Dry Cans, 72" width, vertical stack
2—V.V. Dye Jiggs, 50", ss. tub
1—V.V. Boiloff, 60" 7 drum
1—V.V. Singer, 60" width, 4 burners, w/motor
1—Copper Mixing Kettle, jacketed, 150 gal.
1—Butterworth Tenter Frame 50'x60" w/motor
1—Butterworth Hydraulic Calendar 42" width w/pump
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1—P&W Semi-Decator, 50" width w/pump
52—Copper dry cans, 60" wide, bucket, vertical stack
21—Copper dry cans, 88" wide, bucket, vertical stack
1—Klauder Weldon, 56 stick skein dyer, stainless steel
4—Tolhurst Extractors, 48" w/motor
1—3 roll Mangle, 50" width
1—3 roll Quetsch, 50" width
1—V.V. Centrifugal Extractor, 60"
1—Smith-Drum Skein Dryer, 60 reels
1—P&S Loop Dryer, 40' long, double width
1—V.V. Calender, 3 rolls, 60" width

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1—Range Consisting of: 1—62" Starch Mangle Chrom-Plated Roll 10" Face. 1—16" Diam. Roll—2 SS. Starch Tubs 32" x 36" Deep—1 Set of Vertical Cans 60" x 23" 1—W & J 90° Tenter—Electric Guiders—A and G Housing—2 Roll Simpson Winder—Plaiter Compensator and Schwartz Type Guiders.
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2—SS Tubs 32 x 36" Deep—1 Compensator 1 Set of 10 Vertical Cans 32" x 50" face
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4—Saco-Lowell No. 6 Air Filters, 1947, motor driven.
4—Saco-Lowell No. 7 Air Filters, 1947.
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1—Saco-Lowell No. F-5 Hopper Feeder, 38", motor driven.
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1—Saco-Lowell Ceiling Condenser, motor driven.
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1—Saco-Lowell 40" Finisher Picker, evener motion, 16" Beater, Yardage Counter, motor driven.
1—Toledo Springless Lap Scale, 50 lb. capacity, 2 ounce graduation.

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80—Howard & Bullough 40" Revolving Flat Cards, 26" doffers, 12" coilers, Abington Card Stripping System.
6—Whitin 40" Revolving Flat Top Cards, 27" doffers, 12" coilers, Abington Card Stripping System.

DRAWING

96—Deliveries H & B 4-roll Drawing, 12" coilers, motor driven.

ROVING

14—Whitin 9x41½ Slubbers, 7" gauge, Providence Model, Casablanca Long Draft, 90, 95, 100, 114, 126 spindles.
4—Woonsocket 7x31½ Speeders, 2—176 spindles each, 2—144 spindles each, 5¼" gauge, belt driven.

SPINNING

6—Whitin Band Drive Spinning Frames, 240 spindles each, 4" gauge, 2" rings, 7" traverse, clutch spindles, motor driven.
60—Mason Band Drive Spinning Frames, 264 spindles each, 3⅛" gauge, 2" and 1½" rings, 7" traverse, clutch spindles, motor driven.

WINDING AND SLASHING

3—Universal #90 Winders, equipped for 8¼" bobbins, motor driven.
2—Universal #50 Winders, 6 spindles each, equipped for paper cones, motor driven.
1—Foster #30 Cone Winder, 80 spindles, for paper cones, belt driven.
3—Saco-Lowell Slashers, with 7' and 5' cylinders, positive drive, 56½" and 60" headways, size boxes, Minneapolis Honeywell size controls.
1—Howard & Bullough Slasher, with 7' and 5' cylinders, positive drive, 60" headway, size box with Minneapolis Honeywell size controls, Johnson Joints.
2—Saco-Lowell Cast Iron Size Mixing Tanks, with agitators and heating coils, 42" deep x 44" dia., belt driven.
1—Yale & Towne 2" Size Pump, motor driven.
1—Howard & Bullough Slasher Cylinder, 5', reconditioned.

LOOMS

30—Draper Model "K" 38" Automatic Looms, 43½" reed space, 20-harness dobbies, motor driven.
10—Draper Model "K" 28" Automatic Looms, 33½" reed space, 12-harness dobbies, motor driven.
86—Draper Model "E" 28" Automatic Looms, 33½" reed space, 12-harness dobbies, belt driven.
133—Draper Model "K" 24" Automatic Looms, 29½" reed space, dobbies, belt driven.
264—Draper Model "E" 24" Automatic Looms, 29½" reed space, Lacey tops and 12-harness dobbies, belt and motor driven.
12—Crompton & Knowles 2x1 box Automatic Looms, 33" between swords, dobbies and roller tops, motor driven.

WASTE DIVISION

4—Saco-Lowell Hopper Feeders, 1—24", 2—34", 1—38".
1—Ritson Card and Picker Waste Machine.
1—Tomlinson Single Cylinder Waste Machine.
1—Tomlinson 6-cylinder Hard Waste Machine, motor driven.
1—Whitin 6-cylinder Hard Waste Machine, motor driven.
1—44" Davis & Furber Shredding Picker, all steel cylinder.
1—56" Whitin Willow.
1—Saco-Lowell Condenser with built-in fan.
3—Whitin Wool Roller Cards, 46" x 48", 2 cylinder sets, all steel cylinders, ring doffers, Whitin rub condenser.
3—Whitin Wool Spinning Frames, Pease Type, 136 spindles each, 3⅛" gauge, 1⅝" ring, tape drive, motor driven.

CLOTH ROOM

1—Hermas 48" three blade Cloth Shearing Machine, with automatic seam lift device, motor driven.
1—42" Curtis & Marble Cloth Folder, with 6' lift, motor driven.
2—Curtis & Marble 50" Inspecting Machines, reverse motions, rolling and unrolling stands.
1—42" Cloth Rolling, Measuring and Boarding Machine, motor driven.
1—Curtis & Marble 48" Rolling & Measuring Machine.
1—Logemann Bros. Cloth Baling Press, 40" deep x 57" wide x 5' high, motor driven.

MISCELLANEOUS

1—Terrell all steel bobbin truck hoist, motor driven.
1—Terrell Roving Bobbin Stripper, belt driven.
2—Terrell Filling Bobbin Strippers, Type K, motor driven.
1—Seydel-Woolley Twist Setter, motor driven with 1 Terrell bobbin box and truck hoist, motor driven.
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1—Armstrong Cork Cot Buffing Machine, motor driven.
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Dealers in Rebuilt and Guaranteed

Yarn Winding and Spinning Machinery

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WANTED - CHEMICALS

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WANTED TO BUY
2—168" 28 GAUGE
FAST TRICOT MACHINES
Either Reiner, Aveco or Whitin.
ALSO
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WARPER AND MAGAZINE CREEL
State lowest price and what make, how long ends on creel.

W-9941, Textile World
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24", 18 cut, 64 Feed
BRINTON RMP JERSEY MACHINE
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12 SKEIN CAPACITY

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Buying
Good Used Equipment
is frequently the difference between having needed equipment or doing without it.

8—#90 Universal Machine Co. Quill Winders, 20 Spindles each.
1—#40 Universal Machine Co. Whirlwind Cone Winder, 100 spindles.
1—512 End Magazine Cone Creel.
1—Cahoes Cotton Slasher, 2 cylinder, 5' 7" dia. cylinders; unit equipped with West Point Foundry & Machine Co. headway. Serial #28866.
24—Crompton & Knowles 4x1 box Automatic Looms, 78" between swords.
1—48" Hermas Automatic Cloth Shearing Machine.

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C. I. Steel Frame Washer
1—70"—5 Compartment cypress body, rodded, with 5—72" x 12" diam. iron rolls and 5—72" x 12" rubber covered rolls, complete with carrier rolls, pipings, drive 25 H.P. 220 3 phase AC motor and Reeves drive.

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TEXTILE WORLD

NEW YORK 18, N. Y.

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1—12 Arm S.S., Smith Drum Skein Dye Machine.
1—3 Roll 45" Motor Driven Quetch.
1—40" 60" Winsor & Jerauld Tenter Frame, complete.
1—V. V. 66" Palmer unit, complete with Quetch and Tenter Frame.
1—Rice Barton & Fales 2-Color 60" face Printing Machine.
2—50" Werner Dye Jiggs S. S. lined.
2—54" General enclosed gear S. S. lined Dye Jiggs.
1—Set of 6—20" x 60" Heavy Steel Dry Cans.
1—Set of 8 copper cans, vertical, Reeves & motor.
1—Set of 7 copper cans, horizontal, Reeves & motor.
1—Set of 3 copper cans, 36" diameter by 60" face.
1—50" V. V. Button Breaker.
1—48" Tolhurst Centrifugal Self Balancing Extractor, with motor on side.
1—64" Van Vlaanderen motor driven Tuber.
1—36" motor driven self balancing Hercules Extractor.
1—60" V. V. M.D. Horizontal Extractor.
2—60" motor driven Beamers.
2—60" M.D. Tubing & Measuring Machines.
1—60" Measuring, Inspecting & Tubing Machine, tube to tube, new, variable speed, forward, neutral & reverse.
60 80 gallon stainless steel steam jacketed Kettles.
30 60 gallon copper steam jacketed Kettles.
3 Motor driven 84 spindle Fletcher Duplex Machines.
1—38" Hermas Measuring & Inspecting Machine.
2—No. 50 Universal Coners.
1—U. S. 7½ H. P. Vari-drive.
1—Sterling 7½ H. P. Vari-drive.
1—Reeves 7½ H. P. Vari-drive.
About 5,000 S. S. high speed V. V. Clips.
Agitators of various sizes.
Motors of various sizes.
New & Used Electric Hoists.
1—50" Van Vlaanderen, 2 roll, motor driven Quetch.

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SHerwood 2-7666-7 LAmbert 3-0273

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2—Sargent 36" Wool Scouring Bowls
1—Sargent 42" Picker Feed
2—Harwood 60" Garnett Feeds
1—Hunter 7 section Raw Stock Dryer
1—Sargent 48" Rag Duster
1—D. & F. 7' all iron Cone Duster
1—Schofield 48" automatic Duster (box)
1—C. & M. 48" Fearnaught Mixing Picker
1—C. & M. 24" Shoddy Picker
1—Schofield Hard Waste Pickers 18"x30"
1—P. & S. 24" Shoddy Picker
1—Schofield 42" Carding Rag Picker
1—Clark 48" 6 bar Mixing Picker (New)
1—S. F. 36" Lumper, ball bearing
1—Kitson 36" S-L Bale Breaker
1—Taylor-Wadsworth Backwasher and Dryer
1—Hunter 3 cyl. Garnett 30"x48"
2—P. & S. Camelback Lappers
1—S.L. 4½" Ring Tape Dr. Twister
2—Garnett Breasts, 18" x 80"
4—R. & L. 100# S.S. Stock Dye Kettles

WINDING

UNIVERSAL #50 & #90 WINDERS
REBUILT TO ORDER
2—Universal #8 Winders
1—Foster Model 12, 80 sp. Skein to Cone Winder, Mtr. dr.
3—J. & B. Jackwinders
3—O. L. No. 20 Hi-Speed Cop Winders
2—Worcester Warp Comp. Spoolers

WARPING AND WEAVING

2—360 end magazine cone creels
4—D. & F. or Altemus Warpers—rebuilt to order—82"—120"
1—Warp Comp. Beamer 60"
1—Globe Ball Warper
2—Altemus Long Chain Reamers
4—C. & K. 82" 4x1 automatic Looms
12—C. & K. 82" (4x4 Box) Box Looms
2—L. & G. Chenille Cutters

FINISHING

1—Perkins Cloth Filer, 72" traverse
1—Hunter No. 10 Fulling Mill
3—Phila. Skein Scouring Bowls
6—Tolhurst Mtr. Dr. Extractors 40"-96"
1—Butterworth Rope Squeezer
1—C. & M. 170" Rolling Teasel Gig
1—P. & W. 66" Double Shear
1—P. & W. 66" Plush Shear
1—Gessner 66" Heavy Duty Press
1—P. & W. 66" 4 cyl. Brush & Sander
2—Rope Soaping Machines
1—Yorkshire Crab 72"—3 bowl
1—P. & S. Truck Skein Dryer
4—Hermas, Werner Mtr. Dr. Inspecting Mach. 72"x96" wide
1—80" Insp., Brushing and Roll-up Machine
1—P. & W. 66" Meas., roll., Doubler

MISCELLANEOUS

2—Sturtevant No. 2 Pumps
1—Brown Yarn Strength Tester

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2—#8 Universal Winders, 6 spindles, tube winding.
12—#50 Universal Winders, L drive, 6 spindles each, equipped with tubes.
2—New Supreme Knitting Machines, type MJ, 20" diameter, 20 cut, 1248 needle, 50" ga., Crawford Electric stop motion.
1—Taylor's Control Inst. for slasher.
10—F-5 Saco Lowell Hoppers 38½"

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COMPLETE PLANTS

DYEING, PRINTING & FINISHING MACHINERY

1—Set of 7 Dry Cans, 50", s.s.
1—Set of 14 Werner Dry Cans, 78" wide, copper
1—Set of 14 Textile Machine Dry Cans, copper, 66" wide
1—Morrison 40'L, 54"W Tenter Frame, S.S. inserts
1—W.&J. Tenter Frame, 90'L, 80"W, S.S. plates & inserts
1—V.V. Quetsch, 60", 2 roll, copper pan, M.D.
1—P & W 80" Rolling, Folding & Examining machine
1—V.V. Embossing Calender, 2 roll, 60"
1—Perkins Hydraulic Calender, 60"W, 2 roll, 100 ton Pressure, pump & accumulator
1—Textile Machine Co. Calender, 2 rolls, 68", heavy duty
1—National Loop Dryer, 40'L, 10 fans, M.D. (1948)
1—Morrison Dry Box, net conveyor type, 60"
1—V.V. Palmer Quetsch 60"
1—V.V. Palmer Tenter Quetsch 66"
1—Kemp Singer 60" (1946)
1—P & W Decator, 2 cylinders, 72"
1—7 & 1-12 arm Smith Drum Skein Dyeing Machines, complete with pump and motor.
1—Morrison Simplex Sanforizing Machine, complete with Palmer cylinder, set of rolls, automatic blanket guide, and all accessory equipment.
1—R.B.&F. Print Machines, 6-12 colors, 40"—60"

WEAVING & SPINNING

120—C&K Looms, S-6, 56"
140—Draper, XD, 50"
28—Draper, K, 40"
8—C&K, C-4, 72", 4x1 convertible
500—Draper, Model E, 40"
100—Draper, Model D, 40"
40—Whitin Cards, 40"
44—Deliveries, 4 deliveries per frame, S-L metallic top rolls
19—Combers, Model D, 8 heads, 12" coilers
1—Barber-Colman Tying-in Machine, LS (1946)
2—D.Y. Sipp Eastwood Warpers, 101"W, automatic, 1040 Cone creel (1 yr. old)
3—Schweiter automatic filling winders, 30 sp. (new)

WOOLEN & WORSTED EQUIPMENT

12—D&F Mules, 360 sp., 2½" ga., 14" bobbin (some new)
1—P&S 2 bowl Scouring Machine, width of bowls 30" each
2—S.A.C.M. Scouring Trains, 5 bowls 34" H, 27'6"L, 53½"W; Dryer is 4'5"W, 23'L, 11'10" H.
1—D&F Fearnaught Mixing Picker, all iron cylinder
2—Cone Roving Machines, 80 sp., 8x4
11—S.A.C.M. Combs, 12" on the needle bar
1—Saco-Lowell Oelly Roll Trap Twister, 192 spindles.
3—D&F Cards, 3 cylinder, 60" x 60"
2—D&F Cards, 3 cylinder, 72" x 48"

COMPLETE COTTON MILLS

5,000 to 30,000 spindles, conventional, long draft, combed and carded, with and without weaving.

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37—C&K 54", 2x1 Looms (Rayon)
18—Loom Terry Towel
10—C&K, 4x4 Jacquard Unit
21—C&K 82 Looms (Worsted)

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1900 spindle (Worsted)
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For Maximum Production

Check Your RELATIVE HUMIDITY

YOU ARE LOSING MONEY if the relative humidity in your plant is below what it should be. You can't maintain top production when textile fibres are dry and brittle. You lose in other ways, too. Employee efficiency is lowered, susceptibility to colds increases. Paperboard containers dry out, crack at the creases. Static electricity sparks create a fire or explosion hazard if volatile liquids are present.

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Industry and Process	Relative Humidity Per Cent
Textile—Cotton	
Combing	60 to 65
Weaving	85
Textile—Rayon	
Spinning	85
Textile—Silk	
Dressing	60 to 65
Throwing	65 to 70
Textile—Wool	
Carding	65 to 70
Weaving	50 to 55
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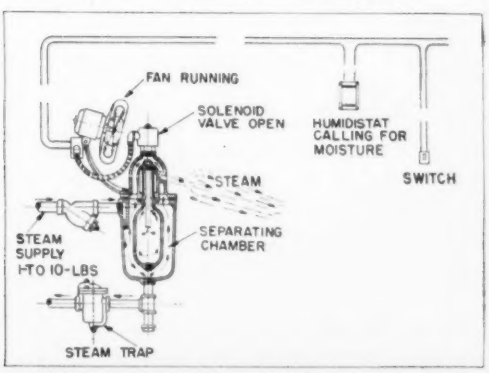
HERE'S THE ANSWER WHEN AIR IS TOO DRY



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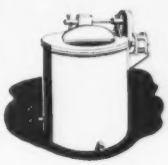

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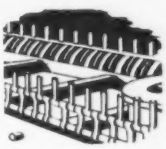

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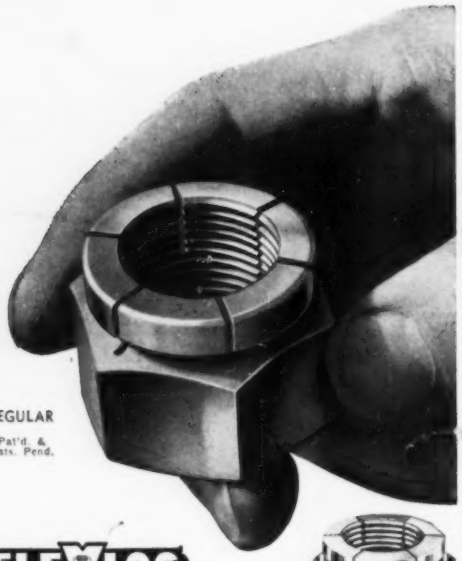

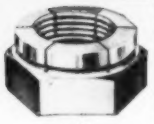

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NUTS

. . . WON'T SHAKE LOOSE
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Available in "thin" and "regular" types—in sizes from #6 to 2" in diameter—in NC and NF thread series. Write for your copy of the "FLEXLOC" Catalog.

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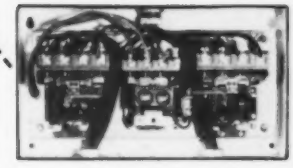

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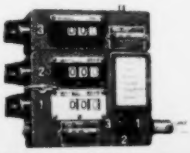
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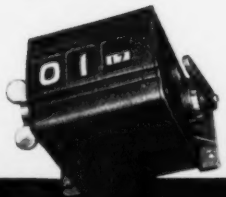

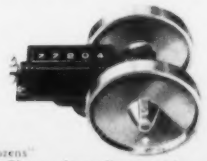
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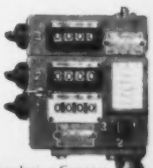
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